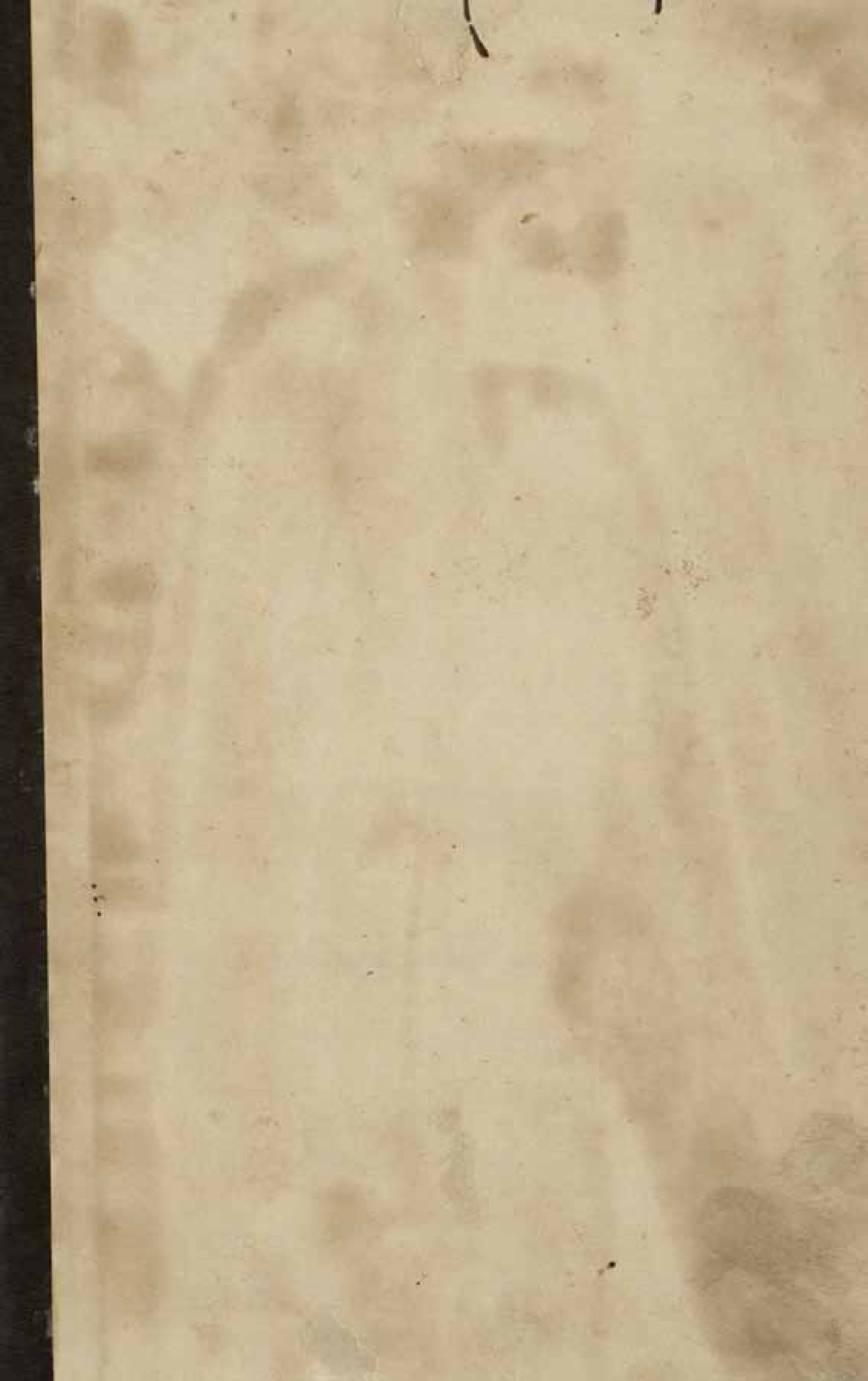








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ALEXANDER'S CAMPAIGN ON THE INDIAN NORTH-WEST FRONTIER

NOTES FROM EXPLORATIONS BETWEEN UPPER SWĀT AND THE INDUS

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MY recent tour of archæological and geographical exploration across the Indian North-West Frontier led me through a fascinating region, hitherto inaccessible for the most part, upon which my eyes had been fixed for fully thirty years. The hill tracts stretching northward beyond the Peshawar border owe their special antiquarian and historical interest to two facts. The fertile valleys drained by the Swāt river, together with the tribal territory of Bunēr south-eastward, had long ago been recognized as corresponding to the ancient *Udyāna*,* a country famous in Buddhist tradition. The early worship and culture which once flourished there were known to have left their traces behind in numerous as yet unsurveyed ruins. But what invests this whole region with an additional historical interest, and one likely to appeal to a wider public, anyhow in the West, is the fact that it must have been the scene of important events in that arduous campaign which brought Alexander the Great from the foot of the snowy Hindukush to the Indus and preceded his triumphant invasion of the Punjab. The present account of the explorations carried out by me on this ground from March to May 1926 will be restricted in the main to what indications I succeeded in tracing of the Macedonian conqueror's passage.

Before, however, I proceed to record these and kindred antiquarian observations we may pass a rapid glance over the general geographical features of this region. Its central and most important part is formed

* For the sake of convenience we may continue to use this long-accepted Sanskrit form of the name, though the researches of Professor F. W. Thomas and M. Sylvain Lévi have proved the true form of the name, as attested by Buddhist Sanskrit texts, to be *Uḍḍiyâna* or *Oḍḍiyâna*; cf. *J.R.A.S.*, 1905, p. 461; *Journal Asiatique*, 1915, I, pp. 105 *sqq.*, and below, p. 436.

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by the territory of Swāt. The river which drains the whole of it and from which it takes its name (a very ancient one, mentioned already in the Rigveda as *Suvāstu* and by Megasthenes as Σόαστος), descends from the high ice-crowned range between Chitrāl and the headwaters of the Gilgit river and joins the Kābul river not far from Peshawar. The Swāt valley is quite alpine in its upper portion where I saw it flanked by magnificent glacier-clad peaks rising close to 19,000 feet in height. But below the hill tract known as Tōrwāl it widens greatly, and for a distance of over 60 miles comprises a wide expanse of fertile plain on either side, easily irrigated and used largely for rice cultivation.

Bold spurs descending to the river from the watershed range in the south divide this open and rich portion of the main Swāt valley at two points. Down to the barrier formed by the Shamēlai spur above the town of Mingaora the valley continues the almost due north-south direction it follows in the mountains. From there it turns south-west to where the precipitous Landakai ridge forms a natural dividing line between Upper and Lower Swāt. Thence the valley takes a more westerly course, still retaining its fertile riverine plain for some 20 miles farther. But beyond, from above the confluence with the Panjkōra, it contracts rapidly. Finally it is through narrow and in parts almost impassable gorges that the river forces its way down to the great open plain of the Peshawar valley. Together with the numerous large side valleys on both sides, Swāt is a territory singularly favoured by nature and of great potential wealth. Occupied now by Pathān tribes, comparatively recent invaders, Swāt has for the last four centuries or more suffered greatly from a state of chronic disorder such as seems endemic in that race when left uncontrolled by some strong power.

South of the lower part of Swāt lies the open plain of the Peshawar valley, the ancient *Gandhāra*, drained by the Kābul river and now as of old the most important district on the North-West Frontier. It has always served as a passage wide open for invaders of India from the north-west. Where the barren but picturesque hill range dividing the Peshawar valley from Swāt rises higher and takes a decided turn to the north-east, it throws off a branch at right angles which runs down to the Indus and encircles the territory of Bunēr. Less extensive and less fertile than Swāt and accessible from it by a number of comparatively easy passes, Bunēr seems always to have shared the political fate of its northern neighbour. As we follow the main range above the left bank of the Swāt river farther up, its height steadily increases and its character as the great divide between the Swāt river and the Indus becomes more defined.

The valleys which run down from this watershed towards the Indus, though not large, are still comparatively open and fertile and hold now a Pathān population closely allied with that of Swāt. But above the mouth of the Ghōrband river the Indus valley rapidly contracts

into a succession of narrow and very difficult gorges comprehensively designated as the Indus Kohistān. The small independent communities of Dard speech which are settled there, together with those to be found in Tōrwāl and elsewhere on the headwaters of the Swāt river, may safely be recognized as a remnant of that pre-Muhammadan population which once held Swāt and the adjacent tracts, and which the Pathān invasion has driven back farther into the mountains or gradually absorbed. The great height of the snowy range separating this portion of the Indus valley from the Swāt river drainage sufficiently explains why there is no need to pursue our rapid survey in this direction further.

Turning now to the west we find Upper Swāt bordered by the territory known as Dīr and drained by branches of the Panjkōra; this joins the Swāt river before the latter emerges on the plain of the Peshawar valley. The tract on the northernmost headwaters of the Panjkōra, in respect of its forests, its ample grazing-grounds and its remnant of Dard-speaking hillmen, resembles the corresponding portion of Upper Swāt. Here too the land-owning population in the lower valleys is Pathān. But neither in size nor in natural resources can Dīr bear comparison with Swāt, and its political importance is due solely to the fact that through it leads the direct route connecting Chitrāl and its Hindukush passes with the North-West Frontier. Crossing the Panjkōra to the west the Pathān tribal tract of Bājauṛ is reached. Considerable as its area of arable land is, Bājauṛ lacks the advantages of abundant irrigation such as Swāt derives from its large snow-fed river; otherwise, too, the territory is far less favoured by nature. To the west there stretches the Hindurāj range forming the watershed between Bājauṛ and the large valley of the Kūnar river, included in the Afghān kingdom. Here we find again great natural resources assured by the abundance of water which the Kūnar or Chitrāl river carries down from the snow and ice-clad heights of the main Hindukush range. With the alpine tracts of Kāfiristān which lie between the latter and the Kūnar valley we are not concerned here.

My first chance of visiting at least a small portion of this wide region came after the Chitrāl campaign of 1895 had resulted in the military occupation of the Malakand pass leading into Lower Swāt and of the fort of Chakdara which guards the passage of the Swāt river on the route towards Dīr and Chitrāl. During short Christmas holidays of 1896 and 1897 I was enabled through the help of the late Colonel (subsequently Sir Harold) Deane, the first Political Agent for Dīr, Swāt, and Chitrāl, to pay rapid visits to such ruins of Buddhist shrines and other ancient remains as are situated within that comparatively small portion of tribal territory in Lower Swāt which had passed under British protection It was largely due to the support of the same kind friend that in January 1898 I was permitted to accompany the field force which under the command of General Sir Bindon Blood carried out a punitive expedition

into Bunēr, and to use this opportunity, short as it was, for an archæological survey of the chief ancient sites traceable in that territory.*

Military considerations did not permit my being allowed on that occasion to visit, as I had eagerly hoped, Mount Mahāban in the south-eastern extremity of Bunēr. There a conjecture, first put forward by General Abbott in 1854 and since widely accepted, had proposed to locate the rock stronghold of Aornos, the scene of the most famous exploit in Alexander's campaign west of the Indus. But my eager wish to test this location on the spot—it was based solely on observations made from a great distance—found fulfilment in the autumn of 1904. Through arrangements with the neighbouring tribes Sir Harold Deane, that great Warden of the Marches, then raised to the Chief Commissionership of the newly created North-West Frontier Province, made it possible for me as the first European to visit and survey the heights of Mahāban. Careful examination of the topographical features of this conspicuous massif, overlooking the plains between the Kābul river and Indus, proved that they could not be reconciled with essential details recorded in the Greek historians' account of that celebrated military feat.† It was a result purely negative. But the state of "tribal politics" then prevailing precluded any attempt being made to visit the ground higher up near the right bank of the Indus, where, as various considerations suggested to me, the true site of Aornos might possibly have to be looked for.

Conditions of chronic disturbance among the Pathān tribes along this portion of the North-West Frontier, together with deep-rooted fanatical distrust of Europeans and all their doings, continued to bar access to Upper Swāt and the adjacent tracts for close on two decades longer. But on the start of my second expedition to Chinese Turkestān, in 1906, I was able to take my way towards Chitrāl and the Pāmīrs by the British-controlled road past Malakand, Chakdara, and Dīr. This gave me a chance of crossing the ground between the Panjkōra and Swāt which must have seen the Macedonian columns pass by. The record of the impressions then received gave me subsequently an opportunity of reviewing in some detail such notices of ancient Swāt and its *topographia sacra* as the accounts of early Chinese pilgrims visiting its Buddhist sites have fortunately handed down to us.‡

It was not until after my return from my third Central-Asian journey (1913–16), and after the strain experienced on the Frontier during the war and in the years immediately following had passed by, that I was able to make a fresh attempt to reach the ground on the Swāt river and the Indus which had so far remained closed to antiquarian research.

* See Stein, 'Detailed Report of an Archæological Tour with the Bunēr Field Force' (Lahore, 1898); reprinted in *Indian Antiquary*, January-March 1899.

† See Stein, 'Report of Archæological Survey Work in the N.W. Frontier Province and Baluchistan' (1905), pp. 19–31.

‡ Cf. Stein, 'Serindia,' i. pp. 1–5.

Guided by such local information as I had been able to gather in December 1921, on a rapid tour along the Hazāra border where it runs near the left bank of the Indus, I approached Sir John Maffey, then Chief Commissioner of the North-West Frontier Province, with a view to being enabled to visit the tribal territory on the opposite side of the river. There a big spur descending from the Swāt–Indus watershed range approximately faces the Black Mountain, the scene of more than one hard-fought Frontier expedition. My special attention had been first called to that ground by my lamented friend Colonel R. A. Wauhope, R.E., of the Survey of India, who on two of those expeditions, in 1888 and 1891–2, had sighted it across the river from the Black Mountain side, and who thought that a likely location of Aornos might there be possibly looked for.

My hope of being allowed to test this suggestion by actual exploration was frustrated for some time by the political situation, more than usually disturbed, which then had arisen in that transborder region. Aggravated dissension between the several tribal sections of Upper Swāt had weakened whatever authority the Miānguls, descendants of that famous saint, the Ākhund of Swāt, and inheritors of a kind of spiritual authority in the land, were able to exercise. The opportunity offered by this state of internal division was being seized by ambitious neighbouring chiefs to extend their territories at the expense of Swāt. While the Nawāb of Dīr was gradually occupying most of the rich tracts on the right bank of the river from the Swāt Kohistān downwards, the Nawāb of Amb and Darband on the Indus was invading Bunēr and threatening to absorb the rest of the main valley of Swāt from the south-east. Fortunately for the modern destinies of ancient Udyāna and incidentally also for my desired explorations, the few years immediately following saw the rise to power in Swāt of a very capable ruler in the person of Miāngul Gul Shāhzāda, the elder of the two grandsons of the great Ākhund. He succeeded in driving out both invaders after a prolonged struggle in the course of which his younger brother was killed. Having thus become undisputed master of Upper Swāt he was soon able to extend his sway also to Bunēr, to the lower portion of the Swāt Kohistān, and to the valleys of Ghōrband, Kāna, Chakēsar, and Pūran between the Swāt watershed and the Indus. All these territories are closely linked to Swāt by geographical relations and history.

The peaceful consolidation of the large "kingdom" thus created during the last four years is being greatly facilitated by the close and satisfactory relations which the Miāngul, or "Bādshāh" as he is now universally known to his people, has wisely fostered with the administration of the North-West Frontier Province. It was solely through this fortunate concatenation of events that the realization of my long-cherished plan of exploration became possible, and to an extent far greater than I had originally ventured to hope for.

Under the instructions kindly given by the Hon'ble Sir Norman Bolton, Chief Commissioner of the North-West Frontier Province, to whom I had re-submitted my proposal from England in the summer of 1925, my old and ever-helpful friend Colonel E. H. S. James, then Political Agent for Dīr, Swāt and Chitrāl, was able to secure the ruler of Swāt's approval for my intended visit to his territory and for the researches I was anxious to effect there. The truly enlightened spirit of the ruler induced him to use all resources at his disposal to facilitate my labours and to assure free and safe movement on ground hitherto inaccessible to Europeans, It thus became possible for me to extend my explorations over most of his territory instead of the comparatively small area to which my original request had applied. In the same way he readily agreed to my archæological investigations being accompanied also by proper topographical surveys such as they necessarily called for on ground but imperfectly known before from native route reports and the like.

It was no small privilege for me to be enabled to spend two and a half months of last spring over antiquarian and geographical exploration in a region which presents exceptional interest to the historical student, and which for the most part had never been visited by a European since ancient times. For this and for all the advantages assured to my efforts I must record here my sincerest gratitude in the first place to the ruler of Swāt. I feel that I owe warm thanks also to those on the British side who gave all needful help for the execution of my plan, after its acceptance by the Miāngul had been secured; to the Government of India in the Archæological Department, which on Sir John Marshall's recommendation sanctioned my employment on the proposed tour and provided a grant of Rs.2000 for its expenses; to Colonel W. J. Keen, who, as Officiating Chief Commissioner of the North-West Frontier Province, encouraged me greatly by his kind personal interest in the enterprise. From Mr. H. J. Metcalfe, I.C.S., Political Agent, Dīr, Swāt, and Chitrāl, I received much useful advice and constant proofs of friendly care both before and after my start from his headquarters on the Malakand. The Survey of India Department once again offered me very valuable help by providing a fully trained and extremely hardworking assistant for topographical work in the person of Surveyor Tōrabāz Khān. In the course of our travel he succeeded in mapping a total area of some 1800 square miles on the scale of 2 miles to the inch. The accompanying sketch-map embodies these surveys. Nor should I omit to mention here the devoted services in connection with practical archæological tasks which were rendered by Naik Abdul Ghafūr, the capable "handy-man" deputed with me from K.G.O. Bengal Sappers and Miners.

Before I proceed to set forth those archæological and topographical indications which my recent explorations have enabled me to gather concerning particular points of Alexander's campaign in the region now controlled by the ruler of Swāt, it will be convenient rapidly to

review the main historical data to be gathered about that campaign from the available classical records. These notices have been often discussed, and as a clear and critical account of them is readily accessible in the late Mr. Vincent Smith's 'Early History of India,' our review may be brief.* Alexander in the spring of 327 B.C. crossed the Hindukush from Bactria towards the Kōh-i-dāmān above Kābul. There he strengthened the hold he had secured upon this part of the present Afghanistan two years before, and then set out for his Indian campaign. There can be no doubt that as far as the country west of the Indus was concerned this enterprise meant, in theory at least, but a reassertion of the sovereignty of that Persian Empire to which he claimed succession and which down to the last Achæmenidian 'King of Kings' had its satrapies right up to the Indus. At Nikaia, a place not yet exactly determined, in the upper valley of the Kābul river, he divided his army. One large force was to move to the tract of Peukelaotis (Sanskrit *Pushkalāvatī*, safely located near Chārsadda, north-east of Peshawar) and to effect the submission of the country as far as the Indus. The other corps was led by Alexander himself into the hill country to the north of the Kābul river, obviously with a view to securing the flank of his main line of communication along it.

The details of the route followed on Alexander's operations against various towns by "the river called Khoes" and against the tribe of the Aspasioi cannot be determined. But it may be considered as certain that they took him for a considerable distance up the large and populous valley of the Kūnar river.† Geographical facts make it equally clear that the scene of subsequent operations, when he had crossed the mountains and moved east,‡ was the present Bājauṛ. This is rendered quite certain by the mention of the river Guraios, which had to be passed by the Macedonians before Alexander could lead them into the country of the Assakēnoi; for the identity of the Guraios with the Panjkōra, coming from the mountains of Dīr and flowing east of Bājaur before it joins the Swāt river, is well established.§ No definite attempt can be made to identify the localities mentioned west of the Guraios, as long as Bājauṛ remains inaccessible for research.

With the passage of the Guraios or Panjkōra we are brought close to the territory which directly concerns us here; for it has long ago been recognized that the country of the powerful nation of the Assakēnoi,

* See 2nd edition, pp. 45 *sqq.* Full translations of the notices furnished by Arrian, Diodorus, Curtius, and some minor sources are to be found in M'Crindle, 'The Invasion of India by Alexander the Great' (1893).

† See my remarks on the importance of the Kūnar valley and the indications pointing to its having been the scene of those operations, in 'Serindia,' I, p. 3.

‡ Cf. Arrian, 'Anabasis,' IV. xxiv.

§ See 'Serindia,' I, p. 2, note 2. The difficulty of the passage across the Guraios which Arrian, IV. xxv., specially comments upon, is illustrated by the experience of the British forces when operating against Bājauṛ from the Swāt side and across the Panjkōra in 1905 and 1907.

the invasion of which was begun after crossing the river, could be no other than Swāt. The numerical strength of the nation and the size of the territory held by it are sufficiently indicated by the numbers recorded by Arrian for the army ("2000 cavalry and more than 30,000 infantry, besides 30 elephants") which had gathered to oppose Alexander's advance. Yet we are told that when the barbarians saw Alexander approaching they did not dare to encounter him in the open, and dispersed to their several cities in order to defend them.*

From this and the account of the several sieges which followed the inference seems justified that the Assakēnoi, though a brave race, could not have been addicted to those fierce and very effective methods of fighting which make the present hill tribes along the barren parts of the North-West Frontier so formidable opponents on their own ground. From the superior type of the abundant structural remains still extant in Swāt from early Buddhist times, and from what we know through the Chinese pilgrims' account of the character of its inhabitants at a later period, it may, in fact, be safely concluded that the material civilization and culture prevailing in that region in Alexander's time and for centuries after was far higher than those to be met with there now, or among the semi-barbarous Pathān tribes holding the barren hills from the Mohmand country down to Wazīristān. Nor should it be forgotten that the possession of lands so fertile as those of Swāt, combined with the enfeebling effect of the rice cultivation preponderant in its valleys, tends to have a debilitating influence on the inhabitants. This is apparent even from the present Pathān population, and must have asserted itself also in the case of its earlier occupants.

As regards the ethnography of the region through which Alexander's hill campaign took him, two points may conveniently be noted here. That the invaders classed the inhabitants as Indians is certain. This fully agrees with what we know from later records about the Indian character of the civilization and religion which prevailed before the Muhammadan conquest along the whole Kābul river valley from the Hindukush to the Indus. At the same time there is good reason to believe that the languages then spoken in that region and in the adjacent hill tracts, including Swāt, were not Indian, but belonged to that independent branch of Aryan speech, designated as Dard or Dardic, which still has its representatives in the valleys south of the Hindukush from Kāfiristān to Kashmīr. In fact, I have shown elsewhere that the very name *Assakēnoi*, in its relation to the corresponding Sanskrit form of *Aśmaka*, as attested among tribal designations of the Indian North-West, bears distinct philological evidence to the Dard speech of those to whom it was applied.†

That the territory held by the Assakēnoi was a large one and com-

* Cf. Arrian, 'Anabasis,' IV. xxv.
† See Stein, 'Serindia,' I, pp. 4 *sq*.

prised the whole of the present Swāt, together probably with Bunēr and the valleys to the north of the latter, is clear; for the operations which were needed for their effective subjugation, extended, as the classical records show, from the Panjkōra to the right bank of the Indus. The accounts given by both Arrian and Curtius of these operations, though recorded in some detail, do not suffice—in the absence of local investigations—to fix with any critical assurance the position of the sites which they mention. Only for the initial stages of Alexander's march through this large territory was definite guidance available, and that supplied by plain geographical facts. It is certain that in ancient times, as at present, the direct route, and the only one of any importance, must have led from the Panjkōra through Talāsh and across the easy saddle of Katgala into the wide open valley which stretches down from Wuch to the Swāt river and to its strategically important crossing now guarded by the fort of Chakdara.

Beyond this the only indication to be derived from geography is the very general one that the several strong places in which the Assakēnoi had taken refuge, and which Alexander successively besieged and captured, are likely to have been situated in the main Swāt valley which at all times just as now must have been the most fertile and populous portion of the territory. Arrian, whose account of Alexander's campaign is throughout the most reliable and avowedly based on a careful examination of sources largely contemporary, distinctly tells us that Alexander "marched first to attack Massaga, which was the greatest city in those parts." The reference made to its chief under the name of Assakēnos shows that Massaga was considered the capital.

Arrian gives a lengthy account of the siege which, after battering engines had been brought up against the walls and the chief killed, ended with the city's capitulation. But he furnishes no clue as to the position of Massaga; nor does the elaborate description recorded by Curtius, VIII. x., of the defences with which both nature and man had provided the city (called by him Mazaga), help us to locate it at present. At none of the sites examined by me have I been able to find topographical features resembling those which this description indicates.* Until further search can be made on the ground, I must content myself with expressing the belief that the site of Massaga may probably have to be looked for farther down in Swāt than has hitherto been supposed. Owing to the great expanse of fertile alluvial soil which is to be found there, Lower Swāt must at all times have been a very populous and rich portion

* "For on the east, an impetuous mountain stream with steep banks on both sides barred approach to the city, while to south and west nature, as if designing to form a rampart, had piled up gigantic rocks, at the base of which lay sloughs and yawning chasms hollowed in the course of ages to vast depths, while a ditch of mighty labour drawn from their extremity continued the line of defence. The city was besides surrounded with a wall 35 stadia in circumference," etc.; cf. M'Crindle, 'Invasion of India,' pp. 194 *sq*.

of the whole valley. Its economic and military importance must have been greatly increased in ancient times, just as it is now, by the ease of direct access from it to the open plain of Gandhāra. It appears to me on various grounds very unlikely that Alexander, having been brought by his route from Bājauṛ and the Panjkōra straight to Lower Swāt, could have carried his operations far up the main valley, as has been supposed,* before he had secured his rear and the direct line of communication with the rest of his army on the lower Kābul river. For this it was necessary first to defeat such resistance as that important lower portion of Swāt was bound to have offered to the invader.

Two points recorded in connection with the capture of Massaga deserve to be briefly noted here. One is the mention made of 7000 Indian mercenaries brought from a distance who shared in the defence of the place, and ultimately after its capitulation made a vain endeavour to regain their homes and in that attempt were exterminated. The employment by a local chief of so large a paid contingent from outside clearly indicates conditions of organized defence wholly different from those with which a modern invader of tribal territories on the North-West Frontier would have to reckon. In the second place attention may well be called to the fact that in spite of the recorded great valour of the defenders, Arrian's account puts the total loss suffered by Alexander in the course of the four days' siege at only twenty-five men. In the cheap price paid for this success we may recognize a proof of the ascendancy which the Macedonian force of highly trained and war-hardened veterans derived, in addition to all other advantages, from the possession of superior armament; for both Arrian and Curtius specially testify to the overmastering effect which the use of the besiegers' war engines, including movable towers and powerful ballistæ, had upon the defenders.

For tracing the further course of Alexander's operations in Swāt we can fortunately avail ourselves of archæological as well as topographical indications. Arrian † tells us that Alexander

"then dispatched Koinos to Bazira, believing that [the inhabitants] would capitulate on learning of the capture of Massaga. He further sent Attalos, Alketas, and Demetrios the cavalry leader, to Ōra, another town, with instructions to invest the town until he himself arrived. A sally made from the latter place against the troops under Alketas was repulsed by the Macedonians without difficulty and the inhabitants driven back within their walls. With Koinos matters did not fare well at Bazira; for its people trusted to the strength of the position, which was very elevated and everywhere carefully fortified, and made no sign of surrender.

"Alexander on learning this set out for Bazira. But having come to know that some of the neighbouring barbarians, prompted to this by Abisares, ‡

* See V. Smith, 'Early History of India,' 2, p. 50.

† Cf. Arrian, V. xxvii. 5; M'Crindle, *loc. cit.*, pp. 69 *sq.*

‡ By Abisares is meant the king of the territory known from Sanskrit texts by the name of *Abhisāra* and located in the lower and middle hills between the Jhelam and Chenāb rivers; in Alexander's time it comprised also Hazāra; see Stein, 'Rājataranginī,' transl., 1, pp. 32 *sq.*, and below, p. 439.

were preparing by stealth to enter Ōra, he first marched to Ōra. Koinos was instructed to fortify a strong position in front of Bazira, to leave in it a garrison sufficient to keep the inhabitants from undisturbed access to their lands, and to lead the rest of his force to Alexander. When the people of Bazira saw Koinos departing with the greatest portion of his troops, they made light of the [remaining] Macedonians as antagonists no longer equal to themselves and descended to the plain. A sharp encounter ensued in which five hundred barbarians were killed and over seventy taken prisoners. The rest fled together into the town, and were more strictly than ever debarred from access to the land by those in the fortified position."

Subsequently, we are told, when the inhabitants of Bazira learned of the fall of Ōra they lost heart and at the dead of night abandoned the town.

I believe the convergent evidence of position, remains, and name enables us to locate Bazira safely at the conspicuous hill which rises with precipitous rocky slopes above the left bank of the Swāt river near the large village of Bīr-kōṭ and on its top bears the ruins of an ancient fortification. *Bīr-kōṭ*—this is the name as I heard it regularly used by the local people, the "Bari-kot" of the map being the form preferred for some reason in the Persian correspondence of scribes and Mullahs—is a considerable place situated at the point where the three large and well-cultivated valleys of Kandag, Najigrām, and Karākar, descending from the watershed range towards Bunēr, join and debouch on the Swāt river. Where the broad spur flanking the Kandag valley on the west approaches the left bank of the river it curves round to the north-east. After descending to a low and broad saddle near the village of Guratai it rises again with bare rocky slopes and ends abruptly in a rugged isolated hill, washed at its northern foot by the river. This hill, known as *Bīr-kōṭ-ghundai* ("the hill of Bīr-kōṭ"), terminates at its top in a bold rock pinnacle, with a triangulated height of 3093 feet. Its maximum elevation above the point where the united stream passing Bīr-kōṭ village joins the river is close on 600 feet.

The hill is roughly crescent-shaped and falls off on its convex side towards the river with precipitous rocky slopes, very difficult to climb and in places quite impracticable. On the concave side to the south the central portion of the hill is lined with unscalable crags, culminating in the rock pinnacle already mentioned. Towards the south-west the hill runs out in a narrow rocky ridge, utterly bare throughout and in addition for the last 300 feet or so of its height very steep. The south-eastern extremity of the hill which runs down towards Bīr-kōṭ village presents a rocky crest and for the most part is also very steep. But here and there the slope affords room for small terraces, and these are covered throughout with debris from stone walls of roughly built habitations and with abundance of potsherds.

Above the highest and largest of these terraces there rises an imposing stretch of wall (Fig. 1), massively built with rough but carefully set stone slabs, to a height of close on 50 feet. Extending

for a distance of about 80 yards and facing to the south-east, this wall protected the fortified top of the hilltop on that side where the natural difficulties of attack were less than elsewhere. At the same time the ground filled up behind it served to enlarge considerably the level space available on the top. This wall, which is clearly visible from the lands by the village and river, continues at approximately the same height to the north. It forms there a bastion-like projection, and then with a re-entering angle turns round the head of a precipitous rocky ravine which runs down to the river. From there the line of the circumvallation, less massive and less well preserved, is traceable all along the river front. From where a small mound marks the north-western end of fairly level ground on the fortified hilltop the wall turns for short stretches to the south and south-east. Here remains of small towers or bastions (Fig. 2) occupy projecting rocky knolls and protect that face of the top which was exposed to attack from the previously mentioned narrow ridge descending to the saddle above Gurutai.

From the point where the wall turns to the south-east its line could be followed only for a short distance. The hill is crowned here with sheer cliffs, and no fortification was needed to make it unassailable from the plain. Here the rocky pinnacle already referred to rises steeply to a height of about 60 feet above the level plateau formed by the rest of the hilltop. The sides facing this bear remains of ancient masonry wherever there was room for walls. This and the abundant pottery debris strewing the slopes and summit clearly indicate that this steep knoll had been turned into a kind of keep and occupied for a prolonged period.

The level ground of the circumvallated area on the top measures over 200 yards from north-west to south-east, with a maximum width of over 80 yards. Plenty of low ruined walls cover the whole of it, marking badly decayed habitations. A mound rising to a height of about 12 feet above the bastion at the south-eastern end may hide the remains of a completely destroyed Stūpa. Another and somewhat lower debris mound at the opposite north-western extremity of the area might also be taken for a ruined Stūpa, but for the masses of broken pottery which lie thickly on its top and all round. Most of the decorated pieces of pottery which were picked up at this site show types which, in view of subsequent finds at approximately datable ruins of Upper Swāt, can be definitely assigned to the Buddhist period.

What time I could spare for this ancient stronghold from the survey of the numerous and interesting Buddhist ruins in the several valleys above Bīr-kōṭ would not allow of any attempt at excavation. But on the line of wall protecting the north-western end of the hilltop (Fig. 2) we came upon curious relics of the means once employed for its defence. We found there numbers of round water-worn stones, undoubtedly brought from the river-bed, of different sizes such as would be used for slings or as heavier missiles. In one heap which a little experimental digging

revealed as one of the ruined towers, there came to light not less than thirty-eight "rounds" of such antique ammunition.

An assured water-supply was essential for the occupation of the site as a stronghold, and in this respect the hill of Bīr-kōṭ was very favourably situated. A main branch of the Swāt river flows round the rocky northern slopes and washes their base so closely that no practicable track can be found there. The steepness of the eroded slopes shows that the river must have flown past there for ages. It is certain that as long as the hilltop was defended it was very difficult for an enemy to cut off access to the river-bank. There might have been defences on this side also; for when I descended from the hilltop, in places with difficulty, on the slope to the west of the above-mentioned ravine I noticed remains of old walls and everywhere abundance of ancient potsherds. Walled-up terraces and remnants of old foundations clinging to the rocky slopes were found also to the east of the ravine.

There is some reason to suppose that the occupants of the ancient fastness were not content to trust for the safety of their water-supply entirely to the natural defence provided by the precipitous slopes. I had been told of two rock-cut passages leading into the hill from above the river, and on my descent from the top was shown the entrance to one of them at an elevation of about 180 feet above the river. The height of the entrance is only about 4 feet at the outside. But once a low doorway, built with masonry of the peculiar type familiar from Buddhist structures in Gandhāra, is passed the height of the gallery, vaulted with horizontal courses of roughly cut slabs, rises to over 10 feet. The width of the gallery between the masonry lining is about 3 feet. In places this lining had fallen and left the rock walls bare. I could ascend the gallery only for *circ.* 16 yards, where I found it blocked by fallen rock. Recesses for a square bolt on either side of the low doorway showed that it could be closed from the inside.

After descending the precipitous slope to about 100 feet above the river, I was shown the exit of another tunnel farther to the east. It could be entered only with some difficulty, and looked in places more like a succession of natural rock fissures which had been utilized by man. Here, too, ancient masonry of the Gandhāra type was to be seen in places over the distance of some 25 yards which alone was possible of ascent. Large fallen blocks of stone barred progress beyond. Judging from the local reports both passages had often been searched for "treasure." Only thorough clearing which would claim time and adequate preparations, could furnish definite evidence as to their direction and purpose. But that one of them, if not both, were meant to provide safe access to water for those holding the fortified hilltop appears to me distinctly probable.

The great antiquity of the site and its prolonged occupation are abundantly attested by the plentiful finds of coins which are made on the top of the Bīr-kōṭ hill and on its slopes, especially after rain. Most

of the coins are melted down promptly or, in the case of gold and silver pieces, find their way down to dealers at Peshawar or Rawalpindi. But even thus a rapid search made at Bīr-kōṭ village secured me a large miscellaneous collection of copper coins of pre-Muhammadan date. The specimens range from issues of the Indo-Greek and Indo-Parthian kings and of the Indo-Scythian or Kushana rulers down to the mintages which preceded the downfall of the Hindu Shāhi dynasty before Maḥmūd of Ghazna, about the beginning of the eleventh century. Most numerous are pieces issued by Azes, Azilises, and other Indo-Scythian kings who exercised extensive rule on the north-western confines of India during the first century B.C., as well as specimens of the copper coinage of the Kushana Emperors who succeeded them.

But coin finds of these early periods are not confined to the Bīr-kōṭ hill alone. They are very frequent too at the numerous sites, marked by remains of Buddhist sanctuaries and ancient settlements, which I was able to trace in the vicinity of Bīr-kōṭ village and in the side valleys which debouch there. The results of the rapid archæological survey I was able to carry out during the four days of March, while my camp stood at Bīr-kōṭ, conclusively prove that Bīr-kōṭ must have been the centre of a populous and important tract during the centuries which immediately preceded and followed the beginning of the Christian era. The great natural advantages for defence which the isolated rock-girt hill of Bīr-kōṭ offered, are likely to have been appreciated long before the period to which the oldest of the coins there found belong. Only systematic excavation could show how far back the occupation of the stronghold dates. But that it existed already at the time of Alexander's invasion, and that it is the place to which Arrian's account of the siege of Bazira refers, can, I think, be proved by convergent topographical and philological evidence.

To take the topographical indications first, it is clear that the Bīr-kōṭ hill fully answers the description given of the position of Bazira, "which was very elevated and carefully fortified." It is easy to understand why no rapid success could be gained there by the force under Koinos, and why Alexander while himself marching upon Ōra was content, instead of attempting a direct siege of Bazira, to leave a small portion of Koinos' troops behind for the purpose of masking the stronghold. The hill of Bīr-kōṭ was a place very difficult to take by anything less than a protracted and arduous siege. It also was a position from which it was easy for Alexander's opponents to block the main road leading up the Swāt valley and to interfere with whatever operations he might wish to carry out in that direction. Hence the order to Koinos "to fortify a strong position in front of Bazira," and "to leave in it a garrison sufficient to keep the inhabitants from undisturbed access to their lands." Where that fortified camp is likely to have stood it is impossible to state. But from what I saw of the ground it appears to me that the elevated area

now occupied mainly by graveyards just above the point where the streams coming from the Karākar and Kandag valleys meet, about half a mile from the foot of the Bīr-kōṭ hill, would have well served the tactical needs in view.

On the philological side it is easy to prove that the name *Bīr-kōṭ*, "the castle of Bīr," preserves in its first part the direct phonetic derivative of the ancient name which the Greek form *Bazira* was intended to reproduce. The Greek letter ζ, *z*, was regularly used for the rendering of both the palatal media *j* and the palatal semi-vowel *y*, two sounds common in the Indo-Aryan and Dardic languages but not known to the Greek alphabet, and *vice versâ*. This is conclusively shown by the evidence of Greek transcriptions of indigenous names belonging to the very region and period with which we are here concerned. Thus in the Greek legends of coins issued by rulers on the North-West Frontier within three centuries of Alexander's invasion we find the name of an Indo-Parthian Satrap who is called *Jihuṇia* in the Kharoshṭhī legend of his coins rendered by Zeionises in the Greek legend of the obverse, while the name of the Greek king Zoilos is reproduced in Kharoshṭhī script on the reverse of his coin as *Jhoïla*.* The two Indo-Scythian kings who are known from their Greek legends as Azes and Azilises and whose coins are found with exceeding frequency at sites of Swāt, are called *Aya* and *Ayiliṣa* in their Kharoshṭhī legends. On the Greek side of the coinage issued by the founder of the Kushan dynasty his name appears as Kozulo Kadphises while the Kharoshṭhī legend of the reverse renders it by Kujula Kasa.† Similarly we find the early Turkish princely title of *jabgu* on the coins of the Kushān Kadaphes reproduced by *Zaoou* in the Greek writing of the obverse, and by *Yaüa* in the Kharoshṭhī of the reverse.‡

From the restored form **Bajira* : **Bayira* it is not difficult to trace the gradual phonetic change into *Bīr* or *Bir*. In the development of all Indo-Aryan languages, as illustrated by the transition from Sanskrit into Prakrit and from this into the modern Indo-Aryan vernaculars, the elision of intervocalic mediæ *j* and *y* is a well-known rule, and this holds good also of the related Dardic languages.§ The subsequent reduction of the resultant diphthong *ai* in **Baira* into *ī* or *i* is a phonetic change for which analogies are equally plentiful in the two language groups.‖ In the same way the disappearance of the final short vowel under the

* See *e.g.* Whitehead, 'Catalogue of Coins in the Panjab Museum,' 1, pp. 65, 157.

† Cf. *ibid.*, 1, pp. 104 *sqq.*, 133 *sqq.*, 179. On certain coins of Kozulo Kadphises and of Kadaphes, his supposed successor, the first part of the name is rendered by the Kharoshṭhī legend as *Kayala* or *Kuyula* ; cf. *ibid.*, pp. 180 *sqq.*

‡ See Marquart, 'Ērānšahr,' pp. 208 *sq.*

§ Cf. Grierson, "Paiśācī, Piśācas, and Modern Piśāca," *M.G.*, 1912, p. 79; 'The Piśāca languages of North-Western India,' pp. 109 *sq.*

‖ See Grierson, "The Phonology of the Modern Indo-Aryan Vernaculars," in *Z.D.M.G.*, 1895, pp. 407 *sq.*, 419.

influence of the stress accent on the penultimate conforms to a phonetic law uniformly observed in all modern Indo-Aryan and Dardic vernaculars.* Thus we can account without any difficulty for the successive change of **Bajira (Bayira)>*Baira>Bīr*. The addition of the designation *kōt*, "castle, fort" (Sanskrit *koṭṭa*), to the name is readily understood, the term *kōt* being generally applied to any fortified place throughout the North-West of India, whatever the language spoken.†

In view of what has just been stated as to the probable pronunciation of the name recorded by Arrian as Bazira, it is of special interest to note that we find the same place mentioned by Curtius under the name of *Beira*.‡ His notice, very brief, follows upon the account of the operations which Arrian more clearly relates as having taken place in the country of the Aspasiol and Gouraioi, *i.e.* in Bājauṛ. We are told that Alexander, "having crossed the river Khoaspes, left Koinos to besiege an opulent city—the inhabitants called it Beira—while he himself went on to Mazaga." I have elsewhere indicated the reasons for believing with Marquart that by the Khoaspes the Panjkōra is meant, which Arrian more correctly calls Guraios.§ Though Curtius, manifestly by error, makes the siege of Beira simultaneous with, instead of subsequent to, that of Mazaga (Massaga), yet there can be no doubt, in view of the reference to Koinos, that the Beira he mentions is identical with Arrian's Bazira. His form of the name is obviously but another attempt to reproduce the indigenous designation of *Bajira or *Bayira.

Curtius tells us nothing more of the stronghold now safely located at Bīr-kōṭ. From Arrian, too, we only learn that the people of Bazira, when they heard of the fall of Ōra, "lost heart and at the dead of night abandoned the town; [they fled to the rock]. Thus the other barbarians, too, did; leaving their towns, they all fled to the rock in that country called Aornos." Before we follow Arrian's narrative further in order to look for the probable site of Ōra and then to trace the true position of that much-discussed fastness of Aornos, I may note here two observations bearing on this flight of the people of Bazira. One is that in the text of Arrian the words of which the rendering has been put above into brackets have been treated as an interpolation, rightly as it seems, by some editors. Hence the text does not necessarily imply that they too fled to the "rock" of Aornos. The other is that topographical considerations seem to me distinctly averse from this interpretation.

We shall see that the position of Aornos must certainly be looked for close to the Indus. Now the shortest distance from Bīr-kōṭ to any point on the right bank of the Indus where a hill fastness corresponding in

* Cf. Grierson, *loc. cit.*, p. 400.

† The term *kōṭ* is quite common in local names of Hindukush valleys, like Darēl and Tangīr, where Dardic languages are spoken, and is used also separately in Pashtu.

‡ See 'Historia Alexandri,' VIII. x.

§ Cf. Stein, 'Serindia,' 1, p. 2, note 2; Marquart, 'Untersuchungen zur Geschichte von Erān,' 2, pp. 243 *sq.*

general features to Aornos could possibly be situated, is over 32 miles as the crow flies, and to the spur of Pīr-sar where I believe Aornos to be located is fully 40 miles. The straight line to which these measurements apply would lead right across a succession of steep hill ranges, and if a route following easier ground along valleys and across passes were chosen, the distance would certainly be still greater. One such route, as the map shows, would have led up the main Swāt valley and thence across one of the passes eastwards to the Indus. But this route was in all probability barred by the Macedonian main force operating, as we shall see, higher up on the river.

A nearer and far safer line of retreat would have lain to the south-east up the Karākar valley, which descends straight to Bīr-kōṭ from the main Swāt–Bunēr watershed; by it the fugitives could have reached within little more than a single night's march a mountain refuge as secure as any that might be sought by them far away on the Indus. I mean Mount Ilam, that great rocky peak, rising to 9250 feet above sea-level, which dominates the watershed range between Upper Swāt and Bunēr, and with its rugged pyramid-shaped summit forms a very conspicuous landmark for both territories. The top of Mount Ilam is girt on all sides with crags and very precipitous slopes which would render an attack upon those holding it most difficult if not practically impossible. The top is formed by two distinct rocky eminences enclosing a hollow space which holds a spring and affords room for a small camp. Sacred legends have clung to this mountain since Buddhist times, as the record of the famous Chinese pilgrim Hsüan-tsang shows,* and its top is still the object of an annual pilgrimage by the Hindus of Swāt and neighbouring parts. A track used by modern pilgrims leads up to Mount Ilam from the side of Bīr-kōṭ through the picturesque Nullah of Amlūk-dara, a branch of the Karākar valley holding fine Buddhist ruins. The distance from Bīr-kōṭ to the top may be estimated at about 11 miles. In view of these local observations the suggestion appears to me justified that the place of safety sought by the fugitives from Bazira was much more likely to have been Mount Ilam than the distant Aornos by the Indus.

The definite identification of Bazira (or Beira) with the ancient fortress above Bīr-kōṭ may help us to locate also the town of Ōra, Ὦρα, which Arrian's above-quoted account of Alexander's operations after the fall of Massaga brings into obvious relation with its siege. We have seen that Alexander, after having set out for Bazira, subsequently was induced to proceed straight to Ōra, for the preliminary investment of which he had previously dispatched certain detachments. From the fact that he ordered Koinos, who stood before Bazira, to join him for the attack upon Ōra with the main portion of his force, and at the same time took care

* For the identification of Hsüan-tsang's *Hi-lo* mountain with Mount Ilam, first proposed by M. Foucher, 'Géographie ancienne du Gandhāra,' p. 48, and confirmed by what I saw on my visit in May 1926, cf. 'Serindia,' I, p. 16.

to have Bazira masked by the remainder holding a post of observation, we may reasonably draw two conclusions: One is that Ora is likely to have lain in the same direction as Basira but beyond it, and the other that Ōra was a place of importance which Alexander felt prompted to secure quickly in view of the reported move to reinforce its defenders.*

Taking into account the general geographical features, we are thus led to look for Ōra higher up in the main Swāt valley and at some point which the presence of ancient remains would definitely indicate as having been occupied by a fortified town of importance in early times. Now the Upper Swāt valley above Bīr-kōṭ at present shows a number of large villages which might be called towns, such as Mingaora, Manglawar, and Chārbāgh, all on the left bank of the river. But at none of these did I succeed in tracing definite evidence of ancient fortification. Nor did I learn of such remains at any of the large villages to be found near the right bank. It is different at Uḍegrām, a considerable village and now seat of a "Tahsīl," situated about 10 miles by road above Bīr-kōṭ, where the fertile and well-irrigated riverine plain attains its widest in Upper Swāt.

Immediately to the south-east of the village there opens the mouth of a small side valley descending from a steep rocky hill range behind which there lies to the east the large valley of Saidu. The crest of this rugged range rising close on 2000 feet above Uḍegrām, and the extremely precipitous slopes which run down from it westwards, bear a very remarkable mountain fastness, undoubtedly of ancient date, known to the local Pathāns as "King Gira's castle." A full description of the site must be reserved for another place. But the few following details will help to convey some idea of the peculiar hill formation which here had offered itself as a natural stronghold.

Where the serrated crest of the range, only some 20 yards across at the widest and in places a mere knife-edge, overlooks the valley of Saidu, it falls off with sheer vertical rock walls for hundreds of feet. Yet even on this side where a successful attack would scarcely have been practicable for the boldest climbers, remains of massive walls cling to the bare rocky crest for a distance of over 500 yards. From the ends of this fortified top ridge there descend two very narrow and precipitous spurs of bare rock crowned with the flanking walls of the stronghold (Fig. 3). These walls, about 7 feet thick on the average, are built of carefully packed courses of rough stones which have been set in mud plaster now hardened. Notwithstanding their apparently insecure position on steep slopes, these walls still stand in places to a height of 9–10 feet. About 1000 feet below the crest the gradual convergence of the rib-like rock spurs makes the two flanking lines of wall approach each other within some 200 yards. Here a line of very massive walls, bearing terraces and in places

* See above, pp. 426–7.

strengthened by small bastions, curves round from the west and joins them up.

Within the area thus protected and only a little above the point where this cross-line of wall runs close to the northern flanking wall, there issues a fine perennial spring from among big boulders filling the bottom of an otherwise dry torrent bed. It was the presence of this spring, the only source of water available within the fortified area, which rendered it capable of use as a place of safety. The importance attached to the spring is shown by the massive construction of the walls, here doubled, which descend into the gorge to defend it. Wherever higher up on the rocky slopes terraces or little ledges afforded room ruined walls of dwellings mark ancient occupation. Their far-advanced decay as compared with the remains of Buddhist monastic quarters, etc., surveyed at other sites, distinctly points to great antiquity. Plenty of low crumbling walls from ancient structures are to be met with lower down, too, amidst the thick growth of scrub and thorny trees which covers the widening gorge below the bottom portion of the defences. Such remains are equally frequent also at the foot of the southern spur. There a succession of walled terraces, all once, no doubt, occupied by houses, orchards, or fields, affords the easiest approach to the fortified area. This explains why we found the fairly level ridge where the flanking wall on that southern spur ends, guarded by a particularly massive bastion still rising in places to a height of over 20 feet.

Pottery debris of distinctly ancient type could be picked up in plenty over most of the ground here briefly described. Yet in view of the extreme steepness of the slopes over which the remains of ruined dwellings within the walled area are scattered, and the consequent inconveniences of approach and communication between them, it seems to me hard to believe that these quarters were regularly occupied except at times of danger. On the other hand, the construction of massive defences on such difficult slopes and up to 1000 feet above the nearest water must have implied such exceptionally great efforts that it is not likely to have been undertaken except for the purpose of assuring a safe retreat for the inhabitants of an important locality. For such a place the open mouth of the valley towards Uḍegrām village, now covered with extensive Muhammadan burial-grounds and sacred groves belonging to the Ziārat of Pīr Khushhāl Bāba, would have afforded ample room. Finds brought to me of small fragments of Græco-Buddhist sculpture, an inscribed seal, and coins belonging to Indo-Greek and Indo-Scythian issues distinctly indicated early occupation of this ground. But owing to its sacred character no systematic search was there possible. Muhammadan local tradition ascribes the conquest of " King Gira's fortress " to Maḥmūd of Ghazna, whose forces after a long siege took it from the last infidel king of Swāt under the leadership of the saint now buried at the Ziārat below.

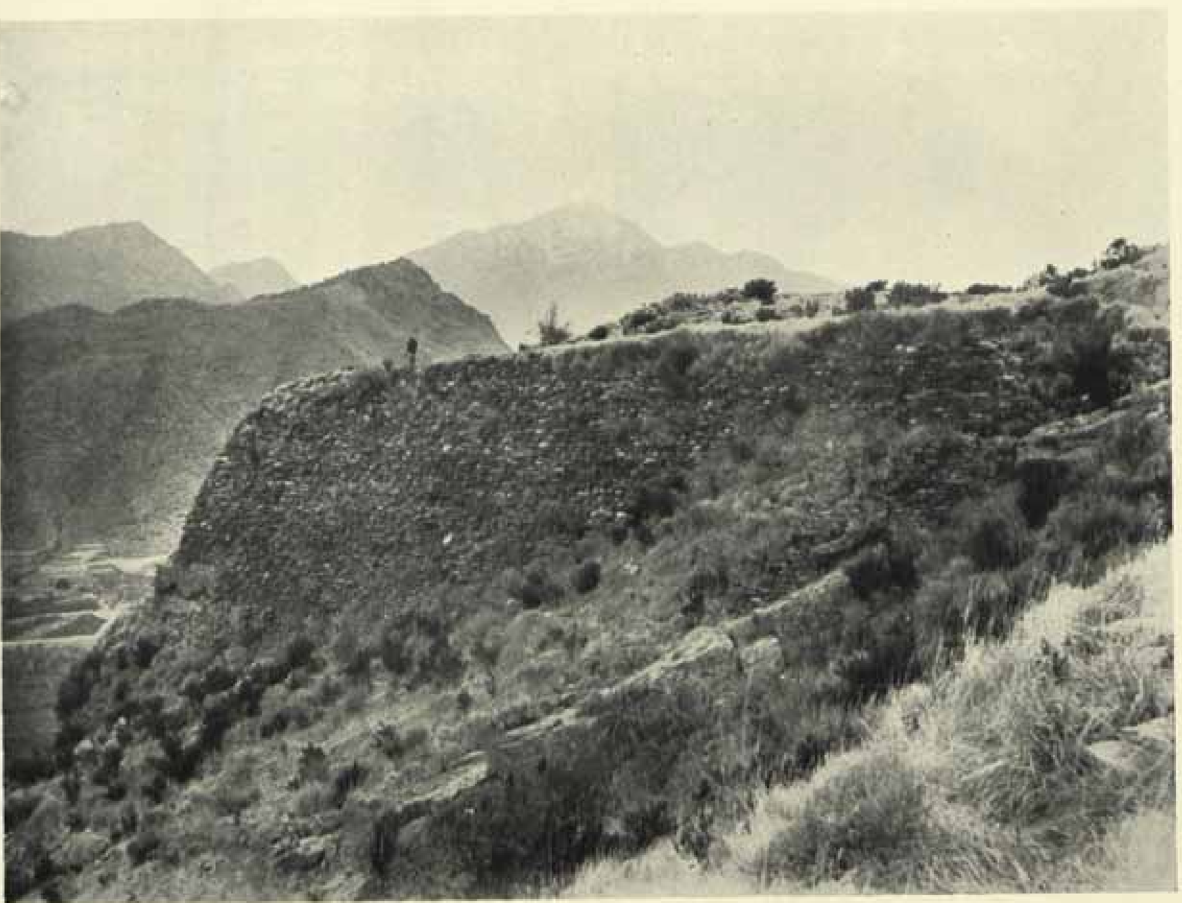
It has appeared to me desirable to record these observations about the remarkable hill stronghold above Uḍegrām in some detail; for the indications already discussed as to the direction of Alexander's operations beyond Bazira, in conjunction with what I shall presently show about the name of the place, suggest the question whether we ought not to look there for the probable location of Ōra. Unfortunately, Arrian's further brief mention of Ōra supplies no topographical or other local hint. It is confined to the bare statement that "Alexander did not find the siege of Ōra difficult, for he took the town on the first assault against its walls and secured the elephants left behind there." Nor does Curtius' account help us. He mentions indeed a place Nora to which Alexander dispatched a force under Polysperchon after the capture of Mazaga, and this has been generally assumed to be the same as Arrian's Ōra. But all we are told about it is that Polysperchon "defeated the undisciplined multitude which he encountered and pursuing them within their fortifications compelled them to surrender the place." *

As regards the name *Uḍegrām*, it should be explained in the first place that it is certainly a compound of which the second part is the word *grām*, "village" (Sanskrit *grāma*), well known to Dardic languages and very common in local names of Swāt, as a reference to the map shows. The first part *Uḍe-* (also heard as Uḍi-) is pronounced with that distinctly cerebral media *ḍ* which to European ears always sounds like a cerebral *r*, and often undergoes that change to *r* also in Modern Indo-Aryan as well as in Dardic languages.† The temptation is great to recognize in Arrian's Ὦρα the Greek rendering of an earlier form of this name *Uḍe-*, and to derive the latter itself from that ancient name of Swāt which in its varying Sanskrit forms of *Uḍḍiyāna*, *Oḍḍiyāna*, has been recovered by M. Sylvain Lévi's critical scholarship from a number of Buddhist texts.‡ The simplification of the double consonant *ḍḍ*, the complementary lengthening of the preceding vowel *ŭ* (*ŏ*), which would explain the long initial vowel in Ὦρα, and the subsequent shortening of this vowel in modern *Uḍe-* (when becoming the antepenultimate in the compound Uḍegrām), all these phonetic changes assumed in the history of the name can be fully accounted for by well-known rules affecting the transition of Sanskrit words into Prakrit and thence into modern Indo-

* Cf. Curtius, VIII. xi.

† Cf. Grierson, *loc. cit.*, *Z.D.M.G.*, 1896, p. 5; 'Piśāca Languages,' p. 104. For an example of *ḍ* being rendered by Greek *r*, cf. Ptolemy's name *Larikē* for Gujarāt, reproducing a Prakrit derivative **Lāḍikā* of the Sanskrit name *Lāṭa*; also Weber, "Greek pronunciation of Hindu words," *Indian Antiquary*, 2, p. 150.

‡ See S. Lévi, "Le catalogue géographique des Yakṣa dans la Mahāmāyūrī," *Journal Asiatique*, 1915, janv.-févr., pp. 105 *sqq.* There, too, it has been convincingly shown that the form *Udyāna* ("the Garden"), commonly accepted by European scholars as the Sanskrit name of Swāt, is but an *idolum libri*, based upon a "learned popular etymology" which a gloss on the Chinese notice of Swāt in Hsüan-tsang's *Hsi-yü-chi* first records.



South-eastern portion of fortifications on Bīr-Kōṭ hill



Ruined towers at north-west end of Bīr-Koṭ hill



Wall on northern spur flanking ancient stronghold above Uḍegrām

Aryan forms.* Nevertheless, it will be well to bear in mind that the nexus of names here indicated must remain conjectural until epigraphical or other evidence helps to establish it.

Arrian, after recording the fall of Ōra and the abandonment of other towns by their "barbarian" inhabitants, has nothing to tell us of further operations in the country of the Assakēnoi. He gives a brief description of that mighty mass of rock called Aornos to which they all had fled, and relates how the fame of its impregnability fired Alexander with an ardent desire to capture it.† This account of Aornos may be left for discussion further on. We are next told that he turned Ōra and Massaga into strong places for guarding the country and fortified Bazira. Then the narrative takes us suddenly south to that division of his army which under Hephaistion and Perdikkas had been sent down the Kābul river to secure the Peshawar valley. Under Alexander's orders they had fortified there a town called Orobatis, for which no satisfactory location has as yet been found; having garrisoned it, they had proceeded to the Indus to bridge it.

That Alexander himself had with the capture of Ōra concluded his campaign in the Swāt valley and moved across the hill range into the Peshawar valley is clear from what follows. He is said to have marched to the Indus and to have received the submission of the city of Peukelaōtis, where he placed a Macedonian garrison. This city has long ago been identified with *Pushkalāvatī*, the ancient capital of Gandhāra, close to the present Chārsadda on the Swāt river and north-east of Peshawar. It is wrongly described by Arrian as lying not far from the Indus. The error must warn us as to possible geographical mistakes even in the most reliable of the narratives dealing with Alexander's Indian campaign. We are next told that Alexander "reduced other towns, some small ones situated on the Indus," while accompanied by two chiefs of this territory; their names, Kophaios and Assagetes, are unmistakably Indian.

Before I proceed to analyze the data we possess concerning the famous "rock of Aornos," to the siege and conquest of which Arrian's account now immediately turns, it will be convenient briefly to indicate certain considerations of a quasi-geographical order which, I believe, deserve specially to be kept in view when looking for the right identification of that much-discussed site. We have seen that Alexander's operations along the Swāt river must have covered Lower Swāt and that most fertile and populous portion of Upper Swāt which extends to the great bend of the valley near Mingaora above Uḍegrām. We have also learned that after the fall of Ōra, which must certainly be located above Bīr-kōṭ and

* Cf. Grierson, *loc. cit.*, *Z.D.M.G.*, 1895, p. 414; 1896, pp. 21 *sqq*. Closely corresponding rules can be shown to have affected also the phonetic development of Dardic languages, especially of that Sanskritized Dardic tongue which, from the evidence of the present Tōrwālī and Maiyā in the Swāt and Indus Kohistān, must be assumed to have been spoken in Swāt before the Pathān conquest.

† See Arrian, IV. xxviii. 2.

probably below that bend, all the inhabitants abandoned their towns and fled for safety to "the rock of Aornos."

Now if we look at the map and keep in mind the situation created for the Assakēnoi by the Macedonian posts established at Massaga and Ōra, it will be clear that the bulk of the fugitive population evacuating the towns farther up the valley could have sought safety neither to the west nor to the south. In the former direction the way was obviously barred by the invaders. To the south as far as it could be reached by routes not commanded by the Macedonian posts guarding the main valley, there lay Bunēr, a country singularly open for the most part and accessible by numerous passes from the side of the Peshawar valley. The plains of the latter had already been reached by the portion of Alexander's army sent down the Kābul river; thus Bunēr, too, lay open to invasion.

Safe lines for general retreat were obviously restricted to the north and east. In the former direction the main Swāt valley continues remarkably easy and open for a distance of close on 30 miles above Mingaora, and the same remark applies to the side valleys opening from it, at least in their lower parts. No safe refuge from invasion, so swift and determined as that of Alexander, could be hoped for there. Higher up where the Swāt river breaks through the narrow gorges of Tōrwāl, invasion would, no doubt, be kept off by the natural difficulties of the ground. But there, just as at the high alpine heads of the valleys which descend to the Swāt river from the snow-covered watersheds towards the Panjkōra and Indus, local resources would have been far too limited for the maintenance of a great host of fugitives. Nor should the great climatic hardships be ignored which those fleeing from the towns of the valley plain would have had to face at the time in those alpine parts of Swāt. We know that the Macedonian invasion must have reached Swāt in the late autumn of B.C. 327, and the rigours of the approaching winter to be faced high up in the mountains would have sufficed to deter any large numbers from seeking safety northward.

Conditions were distinctly more favourable to the east. There a number of large and for the most part very fertile valleys comprising the tracts of Ghōrband, Kāna, Chakēsar, Pūran, and Mukhozai stretch down to the Indus from the Swāt watershed. They can be reached by several easy passes, none much over 6000 feet in height. All are throughout the year practicable for laden mules and ponies, from the open side valleys which leave the Swāt river at the large villages of Manglawar, Chārbāgh, and Khwāja-Rhela, respectively. A single day's march from the riverine plain of Swāt suffices to bring the traveller over any of these passes to the head of the Ghōrband valley, whence access is easy to the rest of those valleys. In addition there are routes from Mingaora, more direct if not quite so easy, connecting that important place in Central Swāt with Pūran and Kābalgrām on the Indus.

The advantages which this side would offer for retreat from invaded

Swāt are clear enough. By crossing the watershed range towards the Indus the fugitives would place a natural barrier between themselves and the enemy. In the tracts there reached they could count upon finding resources sufficient for their maintenance until the danger had passed.* The great distance intervening between those tracts and the Peshawar valley might offer protection from the Macedonian forces in the plain. Finally, having secure access to the Indus, they could easily draw help from across the river when further attack threatened, or else continue their retreat to that side if fresh resistance failed.

With regard to the last-named advantage the evidence available from historical facts both ancient and modern may conveniently be at once pointed out here. We have seen already above that what prompted Alexander to hasten in person to the siege of Ōra was the news of assistance being sent to its defenders by Abisares.† It is true that the Abhisāra territory whose king is here meant comprised in later times mainly the lower and middle hill tracts to the east of the Vitastā or Hydaspes, the present Jhelam.‡ But there is good reason to believe that at the time of Alexander's invasion its ruler's power extended also over the hill portion of Uras'ā, the present District of Hazāra, east of the Indus. This is proved by what Arrian tells us of the Indians who after the capture of Aornos had fled from neighbouring parts across the Indus to Abisares, and also by what he subsequently relates of an embassy from Abisares which Arsakes, ruler of an adjacent territory, attended as a feudatory.§ It has been recognized long ago that by Arsakes the chief of Uraśā is intended, the territory which in Ptolemy's 'Geography' appears under the name of Ἄρσα or Οὔαρσα.||

The close relation between Swāt and Hazāra is fully explained by the map. This shows us that the above-mentioned tracts of Chakēsar and Ghōrband are faced immediately to the east of the Indus by the comparatively large and open valleys of Nandihār and Allāhī. These are now occupied by Pathān tribes, all here, as also farther down by the Black Mountain, closely linked with those established on the other side of the river. From these valleys easy routes lead to Agrōr and the

* The extent of these resources even at the present time is illustrated by the following data ascertained on my passage through Chakēsar and Pūran. Both tracts have suffered severely from protracted local feuds as well as by the heavy fighting which preceded their conquest by the Miāngul in 1923. Yet the revenue in kind paid now to the ruler of Swāt at the lightly assessed rate of one-tenth of the produce was reckoned at 6000 maunds of grain for Chakēsar and at about 4000 maunds for Pūran. Yet in the latter area I noticed that a very great portion of the available land had gone out of cultivation. In Chakēsar, too, abandoned cultivation terraces could be seen in many places. Half-deserted villages were conspicuous in Kāna and in what I saw of Ghōrband.

† See Arrian, IV. xxvii. 7; above, pp. 426–7.

‡ Cf. Stein, 'Rājatarangiṇī' transl., notes on i. 180; v. 217.

§ Cf. Arrian, IV. xxx.; V. xxix.

|| For the identification of Arsa and Arsakes, cf. my note on 'Rājatarangiṇī,' v. 217.

fertile central plain of Hazāra known as Pakhli, about Mansehra and Baffa. This geographical nexus is well illustrated by the fact that the population of this part of Hazāra is largely composed of a tribe known as Swātis, descended from the pre-Muhammadan inhabitants of the Swāt valley whom historical records and living tradition alike prove to have been driven out of their original seats by the Pathān invasion of the fifteenth century. The same close relation is reflected also, to come down to very recent times, by the fact that during the several Black Mountain expeditions since the annexation of the Panjāb, the various Pathān tribes settled on both the Swāt and the Hazāra sides of the river always took their common share in the fighting.

ALEXANDER'S CAMPAIGN ON THE INDIAN NORTH-WEST FRONTIER

Notes from Explorations between Upper Swāt and the Indus

Sir Aurel Stein, K.C.I.E., F.B.A., Indian Archæological Survey

AFTER this rapid survey of the ground to which the Assakēnoi, the early predecessors of those "Swātīs," are likely to have retreated for safety, we shall be better able, I think, to consider the questions raised by what our extant accounts relate of Alexander's great feat at Aornos. Among them Arrian's record is the fullest and undoubtedly also the most reliable. We may attach to it all the more critical value because one of the two contemporary authorities whose narratives Arrian in his preface declares as more worthy of credit than all the rest, and whom he principally follows, was that Ptolemy, son of Lagos and the first of the Ptolemies of Egypt, who personally had played a chief part in the conquest of Aornos.*

After recording the barbarians' flight to Aornos, Arrian immediately proceeds to inform us of the reason which filled Alexander with the eager desire to capture that rock fastness. Arrian's statements on this point have a peculiar interest for the historical student; for they help to throw welcome light on certain psychological factors which undoubtedly have played an important part in more than one of Alexander's wonderful enterprises—just as they did in those of his modern counterpart, Napoleon. At the same time we may recognize in those statements a significant indication of the critical attitude with which Arrian—and perhaps his chief authority also—was apt to view the fabulous element fostered by the hero of his story.†

We are told of Aornos:

"This is a mighty mass of rock in that part of the country, and a report is current concerning it that even Herakles, the son of Zeus, had found it to be impregnable. Now whether the Theban, or the Tyrian, or the Egyptian Herakles penetrated so far as to the Indians I can neither positively affirm nor deny, but I incline to think that he did not penetrate so far; for we know how common it is for men when speaking of things that are difficult to magnify the difficulty by declaring that it would baffle even Herakles himself. And in

* Cf. Arrian, 'Anabasis,' Prooemion, where Ptolemy's name significantly meets us as the very first word.

† See also 'Anabasis,' V. iii., where Arrian expresses similar critical misgivings in connection with Alexander's visit to the city of Nysa, alleged to have been founded by Dionysos. He quotes there Eratosthenes' view "that all these references to the deity were circulated by the Macedonians in connection with the deeds of Alexander to gratify his pride by grossly exaggerating their importance" (M'Crindle).

the case of this rock my own conviction is that Herakles was mentioned to make the story of its capture all the more wonderful. The rock is said to have had a circuit of about 200 stadia, and at its lowest elevation a height of 11 stadia. It was ascended by a single path cut by the hand of man, yet difficult. On the summit of the rock there was, it is also said, plenty of pure water which gushed out from a copious spring. There was timber besides, and as much good arable land as required for its cultivation the labour of a thousand men.

"Alexander on learning these particulars was seized with an ardent desire to capture this mountain also, the story current about Herakles not being the least of the incentives." *

We may never know whether the ambition stimulated by such reports about Aornos was the sole incentive for Alexander to decide upon its capture. This decision may possibly have been due quite as much, if not more, to the strategic consideration invariably kept in view by Alexander of not leaving an enemy behind until he had been completely crushed. But anyhow we have seen that instead of pursuing the fugitive Assakēnoi to their mountain retreat, Alexander moved from Swāt into the Peshawar valley. Thereafter resuming contact with that portion of this army which had already arrived by the route of Kābul river, he organized Macedonian control over this important district and then proceeded to the Indus.

In view of what has been shown above as to the direction to the east of the Swāt-Indus watershed which the retreat of the inhabitants of Upper Swāt was likely to have taken, it is easy for us to understand the sound strategic reasons underlying what might otherwise seem a needless deflection from an important direct objective. An attack upon that mountain retreat of the Swāt fugitives from the south by the Indus offered several distinct advantages. Entanglement in a mountainous region where passes and narrow defiles, if defended, might seriously hamper advance would thus be avoided. It would become possible to cut off the fugitive host from retreat into the territory east of the Indus and from such assistance as Abisares, the ruler on that side, might offer. Nor were the facilities likely to be neglected which the Indus valley and convenient access south to the fertile plains of the Peshawar valley would offer in respect of supplies and other resources in case of prolonged operations.

The importance of the last consideration is clearly indicated by what Arrian tells us immediately after the passage already quoted, which records the reduction of a number of small towns situated on the Indus.

"After he had arrived at Embolima, which town lay not far from the rock of Aornos, he there left Krateros with a portion of the army to collect into the town as much corn as possible and all other requisites for a prolonged stay, in order that the Macedonians having that place as a base might by protracted investment wear out those holding the rock, in case it were not taken at the

* 'Anabasis,' IV. xxviii. 1–4; translation by M'Crindle, 'Invasion of India,' pp. 70 *sq.*



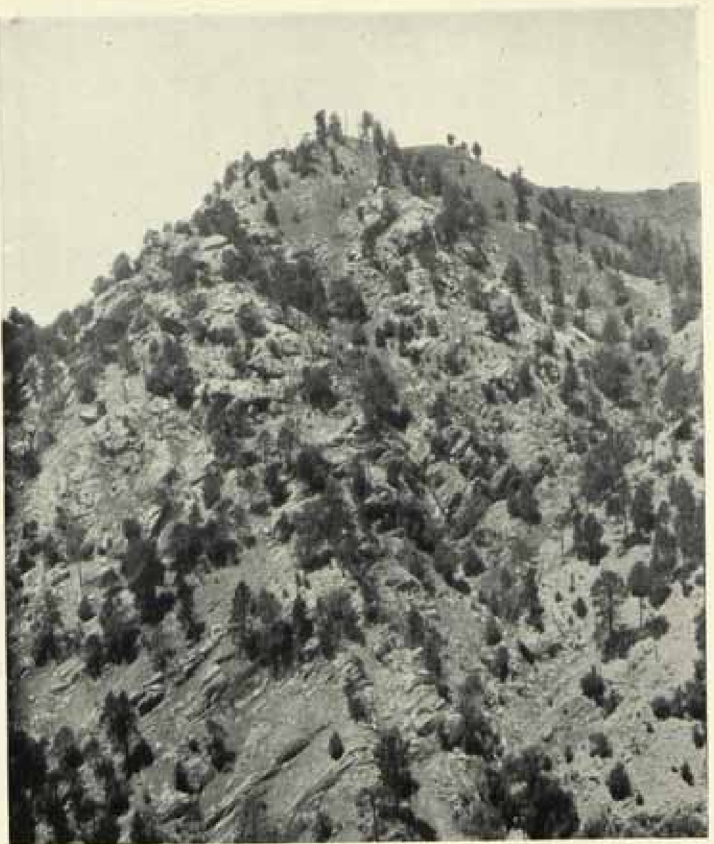
4. *Pīr-sar ridge (Aornos) from southern slope of Ūṇa-sar peak*



5. *Indus valley and snowy Kagan divide from below south end of Pīr-sar*



6. Būrimār alp from Māshlun shoulder, below north end of Pīr-sar



7. Rocky slopes below Kuz-sar end of Pīr-sar

first assault. He himself taking with him the archers, the Agrianians, the brigade of Koinos, the lightest and best armed from the rest of the phalanx, two hundred of the companion cavalry and hundred mounted archers, marched to the rock."

Arrian does not furnish us with any indication as to the position of Embolima. But as the accounts of Curtius and Diodorus agree in placing Aornos on the Indus * the town which was to serve as Alexander's base of supplies may with good reason be also looked for on the Indus. This is borne out by Ptolemy's mention of Embolima as a town of Indo-Scythia situated on the Indus, with coordinates corresponding to those which he indicates for the confluence of the Indus and Kōa or Kābul river.† But as no reliance whatever can be placed on Ptolemy's latitudes and longitudes as far as his map of India is concerned, this does not help us further to determine the exact position of Embolima.‡ Nor can we derive guidance in this respect from the fortunate fact that Professor Sylvain Lévi has discovered references to the same locality in Buddhist texts which mention it under the original Sanskrit form of its name as *Ambulima* ; § for these texts contain no definite local indications.

General Abbott, when discussing in 1854 at great length his location of Aornos on the Mahāban range to the south of Bunēr and Chamla, proposed to recognize Embolima in the village of Amb, situated on the right bank of the Indus, from which the present semi-independent chief of Tanāwal territory in Hazāra takes his title.‖ The identification of Mount Mahāban with Aornos, though generally accepted for many years, proved untenable in the light of what the close examination of the ground, carried out by me in 1904, showed as to the true topographical features of the supposed site.¶ For these could not be reconciled with the plain and comparatively precise indications that are supplied to us by the classical accounts, and in the first place by that of Arrian, as to the character of the natural stronghold and its immediate surroundings.

But a recognition of this fact will not necessarily invalidate the location of Embolima at Amb. Arrian's narrative shows that it took Alexander two marches from Embolima to reach the neighbourhood of Aornos.

* See below, p. 528.

† See 'Geographia,' VII. i. 27, 57.

‡ More useful, perhaps, is the relative bearing to the south-west of Embolima, which Ptolemy indicates for *Asigramma*, mentioned by him as another town of Indo-Scythia and as situated on the Indus; for Asigramma can probably be identified with the ruined site of Asgrām situated about 2 miles to the west of the Indus just outside the extreme north-east corner of the Peshawar District; cf. my 'Archæological Survey Report, N.W.F.P.' (Peshawar, 1905), p. 47. But as no value can be attached to the indication of distance between the two places as deduced from the respective coordinates, no safe conclusion is possible as to the exact position of Embolima.

§ See S. Lévi, *loc. cit.* in *Journal Asiatique*, 1915, janv.-févr., p. 103.

‖ See "Gradus ad Aornon," *J.A.S.B.*, 1854, pp. 338, 344. This identification had been suggested already by M. Court, one of Ranjit Singh's generals; cf. *Journal of the Bengal Asiatic Society*, 1839, p. 310.

¶ Cf. 'Archæol. Survey Report, N.W.F.P.' (1905), pp. 28 *sqq*.

Hence even if the above location is accepted we may still look for Aornos higher up the Indus, in that area comprising the tracts of Ghōrband, Chakēsar, and Pūran, to which the considerations fully set forth above point as the ground most likely to have been sought by the population retreat ng from Upper Swāt. It should, however, be remembered that the identification of Amb with Embolima (Sanskrit *Ambulima*) rests so far solely on the identity of the modern name with the first syllable of the ancient one, and that the assumed apocope of fully three syllables at the end of the latter is more than can easily be accounted for by the rules governing the phonology of modern Indo-Aryan vernaculars. If Embolima were to be looked for farther up the river the position occupied by Kābalgrām, a large village at the mouth of the fertile Pūran valley and a centre of local trade, might suggest itself on topographical grounds as a likely site.

Ever since my visit to Mahāban in the autumn of 1904 had furnished conclusive evidence against the location of Aornos on that range, I had kept in view "the possibility of our having to look for Aornos higher up the great river." * But it was only in 1919, after the return from my third Central-Asian expedition and after prolonged labours on the results of the second, that my attention was drawn in a definite fashion to ground where a likely solution of the problem could be hoped for. The right bank of the Indus and all the adjacent territory to the west of it had, indeed, remained as inaccessible as before. But fortunately work on the maps reproducing the surveys carried out during my three Central-Asian expeditions brought me in 1918–19 into close contact with the late Colonel R. A. Wauhope, R.E., at the Trigonometrical Survey Office, Dehra Dun.

The personal knowledge which this highly accomplished officer of the Survey of India had gained of that ground during the survey work conducted by him on the left bank of the Indus during the Black Mountain expeditions of 1888 and 1891–2 furnished me with a very valuable clue. From high survey stations then established on the Black Mountain range, and again during the occupation of the Chagharzai, Nandihār and Allāhī tracts, Colonel Wauhope had ample opportunities for becoming familiar with the general features of the hills on the opposite side of the Indus valley all the way between the Hassanzai country, above Amb, and Chakēsar. Being a sound classical scholar all his life, he was interested in the question of Aornos, and what he had observed at the time had led him to form the belief that a position corresponding to that described by Alexander's historians was more likely to be found on the spurs descending steeply to the Indus opposite Thākōt in Nandihār than anywhere else. But as an experienced topographer he rightly recognized also that a definite location could be hoped for only by close examination on the spot.

* See 'Archæol. Survey Report, N.W.F.P.' (1905), p. 30.

The spurs just referred to are the easternmost finger-like offshoots of the range which trends with a due easterly bearing and a total length of close on 20 miles from the Swāt–Indus watershed above Manglawar and Chārbāgh to the Indus. On the opposite side the river there passes the mouths of the Nandihār and Allāhī valleys. From the available Survey of India maps, including Sheet No. $43\frac{B}{N.E.}$ on the scale of 2 miles to the inch, it was seen that the range may be roughly described as dividing the valleys of Ghōrband and Chakēsar; that its crest rises to triangulated heights between 9265 feet in the west and 7011 feet in the east; and that round its eastern foot the Indus flows in a wide bend. Little else could be made out from the map, based as it necessarily was for this ground on sketches made from a distance, on native route reports and the like.

My first endeavour, made in 1922 after a rapid visit to Agrōr and the Indus banks facing Amb, had been to secure access to the ground just indicated from the tribal territory of Nandihār on the opposite side of the river. But by the time I was able to renew the attempt in 1925 that same ground, together with the rest on the right bank of the Indus down to the Barandu river some 9 miles above Amb, had passed under the sway of the Miāngul ruler of Swāt. The question of giving me access had therefore to be taken up with him by the political authorities of the North-West Frontier Province. The first definite news of his assent reached me early in December on my return to India. I felt particularly gratified by the condition which the Miāngul had indicated, that I should visit the tract in question not from across the Indus but from the side of Swāt; for obviously I could thus hope for a chance of extending my exploratory work over far more of interesting ground than originally contemplated. From the same letter I learned that the site of Aornos, which had been mentioned as the principal objective of my visit, was locally known by the name of *Pīr-sar*.

This precise information as to the locality to be looked for was bound to be received by me with surprise; for former experience in this region had shown me that genuine local tradition of Alexander's campaign twenty-two centuries ago survives there as little as it does anywhere else on the North-West Frontier or in the Panjab. Indeed, none could reasonably be expected considering the great length of time passed, the far-reaching ethnic changes, the ephemeral character of the great Macedonian's passage, and the total absence of any historical recollection concerning him and his invasion in the whole range of Indian literature, as distinct from the "Alexander romance" introduced in its Persian garb through the Muhammadan conquest. What I subsequently had occasion to hear from Sipāh-sālār Aḥmad 'Alī, the Miāngul's commander-in-chief, who accompanied me throughout my tour, and from others of the ruler's *entourage*, has confirmed my belief that their connection of Alexander's name with that particular locality of Pīr-sar had originated

merely from the way in which the object of my proposed visit had been communicated to the Miāngul in official correspondence, and from the interest which had thus been directed towards a site likely to answer the general description conveyed. Nevertheless the apparent precision with which the local inquiry made at the ruler's desire had fixed upon that locality, was a moment not to be ignored. This will explain why, when the completion of our surveys in Upper Swāt allowed me to turn towards the Indus and to approach there the ground to which Colonel Wauhope had drawn my attention, I wished to visit Pīr-sar in the first place.

Our route starting from Khwāja-khe in Upper Swāt led first across the Karōrai pass into the northern portion of the Ghōrband tract. Thence over the Shalkau pass, close on 10,000 feet in height and still deeply covered with snow, the head of the large and fertile valley of Kāna was gained. Here we closely approached the still inaccessible portion of the Kohistān on the right bank of the Indus. By descending the Kāna valley from north to south the lower course of the Ghōrband river was reached. Along it lies a much-frequented route from the Indus to Swāt. Fa Hsien on his way from Darēl, and probably other Chinese pilgrims, had followed it.* Almost opposite to the mouth of the Kāna valley there descends a valley from the above-mentioned range dividing Ghōrband and Chakēsar, and an easy pass at its head above the village of Upal forms the most direct connection between the two tracts.

Starting on foot from the village of Upal on the morning of April 26, we ascended first to a spur which at a height of about 6000 feet bears a small plateau occupied by a Gujar hamlet and its fields. Here at the ruin of a small walled enclosure remains of ancient decorated pottery, as well as an ornamental bronze bracelet of very early shape, were picked up practically on the surface. From there the ascent lay first past terraced fields and then steeply over slopes clothed with luxuriant conifer and Ilex forest to the crest of the range reached at an elevation of a little under 8000 feet. Along this crest, very narrow and rocky throughout, or on the steep southern slope close below it, led the track, such as it was, eastwards. Fine views had been obtained before of the great glacier-clad peaks above the Swāt river headwaters, and on passing below the top of the eminence, shown with the triangulated height of 8360 feet on the map and known as Acharo-sar, there was sighted through the pines and firs the Indus valley below and the long snow-topped range of the Black Mountain beyond it. Past a very fine spring issuing below Acharo-sar we reached soon the open top of a side spur which lower down bears the grazing plot known as "Little Ūṇa." And from this point there came into view the bare rocky peak of Ūṇa-sar, or "Mount Ūṇa" (shown on the map with the triangulated height of 8720 feet), which I had before heard mentioned as the highest on this side of the range, and

* See 'Serindia,' i. pp. 7 *sq*.

stretching away from it southward I sighted the flat-topped ridge of Pīr-sar.

It was a very striking sight, this long almost level ridge, as it rose there, girt all round with cliffs, above the precipitous smaller spurs and steep ravines which were seen to run down to the Indus close on 6000 feet below (Figs. 4, 5). At its northern end it was seen to slope down from a steep tree-clad hill, and this from where we stood, about 2 miles off to the west, appeared to join up with the main crest of the range as it continues to the east of Ūṇa-sar. Pīr-sar seemed near enough as I looked across the deep valley flanked by precipitous slopes which separated us from it; but in the end it took us nearly three hours more to reach it.

First we had to make our way past the steep southern face of Mount Ūṇa, and as lower down this falls off with sheer walls of rock, to ascend by a troublesome track to within 200 feet or so below the summit. Then it became possible to cross to the northern slope of the crest, steep too, but well timbered, and thus to descend to the small tree-girt alp of Būrimār (Fig. 6), where we found some summer huts of Gujar graziers and the fenced-in resting place of some Muhammadan saint. At first Būrimār seemed to link up with the wooded conical height marking the northern end of Pīr-sar; but when the lower edge of the gently sloping alp was reached I noticed, with some dismay at the time, I confess, that a deep and precipitous ravine previously masked by close tree growth still separated us from that height. The descent to its bottom, which, as careful aneroid observations on two separate occasions showed, lay fully 600 feet lower, was very fatiguing owing to the steepness of the slope and the slippery nature of the ground.

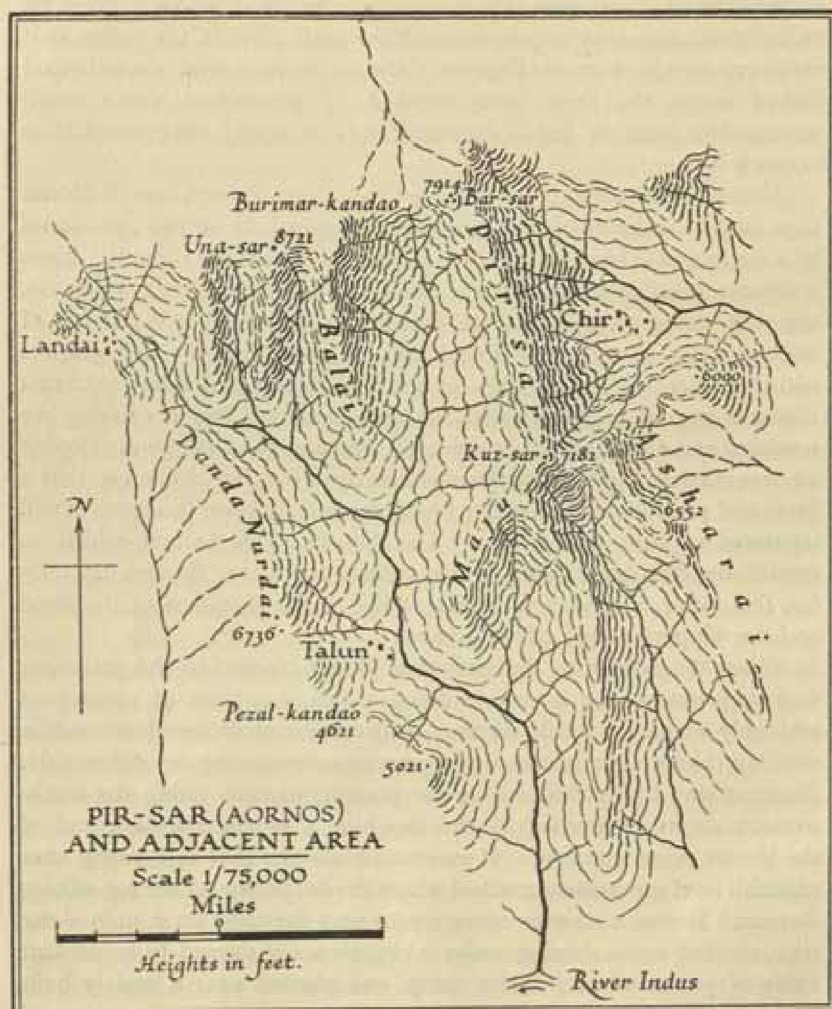
When the bottom of the gully was at last reached in the gathering dusk it proved to be a very confined saddle, less than 40 yards long and only about 10 yards across. Fallen trees encumbered the saddle and lay thickly also in the narrow ravines descending on either side. Progress was trying, too, along the precipitous cliffs lining the south-western slopes of Bar-sar ("the top hill"), as the northern end of the Pīr-sar ridge is known. It was with real relief that at last long after nightfall level ground was reached where the flat portion of the top adjoins Bar-sar. It was a strange sensation to pass for close on a mile along what the full moon shining under a cloudless sky showed to be verdant fields of young wheat. Then camp was pitched near a rudely built mosque, at an elevation which subsequent observations with the mercurial barometer proved to be fully 7100 feet above sea-level.

I have thought it expedient to describe the march which brought us to Pīr-sar in some detail, because it may help to visualize better those topographical features which lead me to believe that this remarkable ridge represents the long-sought-for site of Aornos. For the same reason I may proceed at once to record the observations gathered by a careful



examination of the ridge and the surrounding ground in the course of a three days' stay. Reference to the accompanying sketch-map, from the survey on the scale of 3 inches to the mile prepared by Surveyor Tōrabaz Khān under my direct supervision, will best help to illustrate them.

Pīr-sar is but one of a series of narrow spurs which the range stretching



PIR-SAR (AORNOS) AND ADJACENT AREA
Scale 1/75,000
Miles

from Upal throws out south towards the Indus, before it drops rapidly in height beyond the triangulated point 7011. There it flattens out fanlike towards the low plateau of Maira washed at its foot by the Indus. Of these spurs Pīr-sar preserves its height farthest, and, owing to the uniform level and the very fertile soil of its top, affords most scope both for cultivation and grazing. The practically level portion of the top

extends at an average elevation of about 7100 feet for over 1½ miles. At its upper end this flat portion is adjoined for some distance by gentle slopes equally suited for such use (Fig. 8).

Owing to its greater height and the depth of the valleys on either side Pīr-sar forms a dominating position; overlooking all the other spurs, it offers an exceptionally wide and impressive view. This comprises the whole of the Indus valley from below the Mahāban range in the south to where the winding course of the great river lies hidden between closely packed spurs descending from the high snowy ranges towards Kāgān and the Swāt headwaters (Fig. 5). To give some idea of the extent of the vast panorama commanded from Pīr-sar, it must suffice here to mention that it includes northward the great ice-crowned peaks above Tōrwāl, Dubēr, and Kandia, and to the east all the ranges which adjoin the central part of Hazāra; southward the plain of the Peshawar valley above Attock could be distinctly sighted.

The spur from its level top, to which the name *Pīr-sar*, "the holy man's height," is properly applied, falls off both on the east and west with very steep rocky slopes. In places these form sheer cliffs, while in others pines and firs have managed to secure a footing. The southern end of Pīr-sar rises into a small but conspicuous hillock, known as Kuz-sar, "the lower height," as opposed to the Bar-sar at the northern end (Fig. 4). There the spur divides into three narrow branches, all flanked by precipitous rocky slopes (Fig. 7). The crest of the middle one is in its upper portion so steep and narrow as to be practically inaccessible. That of the eastern branch, known as Ashārai, is very narrow too, but bears some knolls which afford room for small patches of terraced cultivation. The shortest branch, called Māju, which juts out like a bastion to the south-west, also bears two such small patches on its crest, before it terminates in sheer cliffs at a level of about 1600 feet below the top of Pīr-sar.

The western slopes of Pīr-sar descend steeply for some 2000 feet into a very confined valley (Fig. 4). This in parts of its bottom is an impracticable ravine, while in others little terraces bear a few scattered fields. On the opposite side of the valley there rises with formidable bare cliffs, almost perpendicular in places, the small spur of Balai. It has short stretches of more gentle slope on its top used for summer grazing; but these are practically accessible only from the crest of the main range just below the Ūṇa-sar peak. A deep ravine divides the spur of Balai westwards from another and much longer one, known to the local Gujars as Danda-Nūrdai. This separates from the main range near the grazing-grounds of Landai and farther down faces the south-western slopes of Pīr-sar. Its narrow serrated crest is crossed by two passes. The lower one, called Pēzal-kandau, at an elevation of about 4000 feet, gives access to a portion of the valley where opposite to the cliffs of Māju some cultivation is carried on by the scattered homesteads of the Gujar hamlet of

Tālun. From below the Pēzal-kandau it is possible to ascend by a difficult track to the crest of the Māju spur, and thence to the southern end of Pīr-sar. Across the other pass, about 6500 feet above sea-level, a somewhat easier route leads from the valley behind the Nurdai-Danda spur to the grassy slopes below the alp of Little Ūṇa, and thence joins the track passing along the top of the main range. We shall see below that these passes may claim some interest in connection with the proposed location of Aornos on Pīr-sar.

From here we must turn back to Pīr-sar to acquaint ourselves rapidly with the ground which adjoins eastwards. That it differs in some aspects from that observed to the west is due mainly to the fact that the main range, after throwing off to the south the commanding spur of Pīr-sar, very soon falls off in height and becomes bare of tree growth. The drainage descending here from it does not flow south in well-defined separate valleys, but gathering in one wide trough takes its course to the Indus south-eastwards. Between the deeply eroded nullahs which join this trough there rises a succession of short knolls and ridges. All have very steep slopes, but are crowned by little plateaus which as seen from Pīr-sar give them an appearance curiously suggestive of small detached islands. Most of these little hilltops bear patches of cultivation; but all are devoid of trees and water, and only capable of temporary occupation. The slopes of Pīr-sar facing east descend also very steeply. About 1500 feet below the middle of the spur they become somewhat easier and here allow room for the small hamlet of Chīr, permanently tenanted by about a dozen of Gujar households. But as its terraced fields occupy the angle between two deep-cut ravines, with rocky scarps descending precipitously for some 500 feet, access to Pīr-sar is made very difficult from this side too.

It only remains for me briefly to describe the top of the Pīr-sar spur. This presents itself for a distance of a little over 1½ miles as an almost level plateau, occupied along practically its whole length by fields of wheat. The width of the flat ground on the top varies from about 100 to 200 yards, with strips available for grazing by the side of the fields. Fine old trees form small groves in places (Fig. 9), and one of these near the middle of the ridge shelters a much-frequented Ziārat, or shrine. There are several small springs in the little gullies which furrow the steep slopes close below the ridge, and these feed the streams which pass near the fields of Chīr or drain into the valley above Tālun. But in addition two large reservoirs, as shown in the plan, have been constructed with *bands* of rough stonework in order to store plentiful water from rain or melting snow, and thus to meet the need of the herds of cattle brought for grazing during the summer months. We found them filled to a depth of several feet. Over two dozen of homesteads, roughly built in the Gujar fashion, and scattered in groups over the plateau, serve to shelter the families which move up

Māshlun



8. *North end of Pīr-sar ridge with Bar-sar hill above, and Swat–Indus watershed in distance*



9. *Fields near the middle of the Pīr-sar ridge*



10. *Gujars examined about local traditions on Pīr-sar*

from Chīr and Tālun with their cattle and occupy Pīr-sar from the latter portion of spring till the autumn. The mosque to be referred to below forms the centre of the settlement. The fact that the Pīr-sar ridge stretches from north to south and is nowhere shaded by higher ground assures abundance of sunshine to its top. In consequence this gets clear of snow very early in the year. This explains also why, in spite of an abnormally late spring and the bitterly cold winds still blowing down from the Indus Kohistān at the time of our stay (April 27–29), we found the wheat already standing high.

At its southern end Pīr-sar is guarded, as it were, by the hill of Kuz-sar already mentioned, which rises about 100 feet above the plateau and completely commands the difficult paths leading up from the Māju and Ashārai crests. At the northern extremity the plateau is still more effectively protected by the bold conical hill of Bar-sar, which rises to a height of about 7900 feet, and is thus on its top about 800 feet higher than the plateau. The approach from the latter to the thickly wooded top lies first over easy grassy slopes (Fig. 8), but from about 300 feet below it becomes very steep and rocky. The top portion of Bar-sar, as the plan shows, has a distinctly triangular shape. The sides of the triangle to the east and south-west are lined with crags and very precipitous. The same is the case with the side facing north-west. From the angle pointing north there leads an easier slope down 200 feet to a narrow saddle, and beyond it there rises close by a small flat-topped outlier of Bar sar known as Lānde-sar ("the lower height"). Its elevation is but little less than that of Bar-sar, and the slopes below it are very steep and rocky on all sides except where the saddle links it with Bar-sar.

It is by the angle pointing west that Bar-sar joins up with the main range, in the axial line of which it lies. But it is just here that the continuity of the range is broken by the deep and precipitous ravine which we encountered on our first approach to Pīr-sar. The bottom of this ravine lies approximately on the same level as the plateau of Pīr-sar and about 600 feet below the alp of Būrimār which, as we have seen, faces Bar-sar. I have already had occasion to describe the troublesome descent from Būrimār to the bottom of this ravine known as Būrimār-kandao. But the angle at which the narrow rocky *arête* from the top of Bar-sar runs down to it is still steeper. The succession of crags, in places almost vertical, is here, however, broken at one point by a projecting small shoulder, called *Māshlun*. This, visible in the distance in Fig. 8, is quite flat on its top and extends for about half a furlong westwards, with a width of some 30 yards at its end. Trees grow on it thickly just as on the rocky slopes above and below too. This shoulder of Māshlun juts out at a height of about 450 feet above the bottom of the ravine, and behind it precipitous cliffs rise for another 350 feet or so higher to the summit of Bar-sar. I shall have to recur further on to

the remains of an ancient fort traceable on this summit, and to the important topographical indication presented by the shoulder of Māshlun.

Having now described the actual configuration of Pīr-sar, I may briefly sum up the essential features which were bound to invest it with exceptional advantages as a place of safety and natural stronghold for the ancient inhabitants of this region. Its great elevation, more than 5000 feet above the Indus, would suffice to make attack difficult. The extent of level space on its top, greater than that to be found on any height of equally natural strength further down on the right bank of the Indus, would permit of the collection of large numbers both for safety and for defence. Its central position would make Pīr-sar a particularly convenient place of rally for large and fertile hill tracts such as Chakēsar and Ghōrband, as well as for that portion of the Indus valley lying close below where the space available for cultivation is wide and villages accordingly large and numerous. The great height and steepness of the slopes with which Pīr-sar is girt would suffice to make its defence easy in times when those fighting from superior height had every physical advantage on their side. And in this respect full account must also be taken of the fact that even on the side where the spur is adjoined and overlooked by the main range, the deep ravine of the Būrimār-kandau assured isolation.

From this survey of Pīr-sar we must now turn back to the record of Alexander's operations where we left it on his arrival in the vicinity of Aornos. Arrian's description of them is so clear and instructive in its topographical details that it appears best to reproduce it here *in extenso*.* I give it in Mr. M'Crindle's translation, with a few slight alterations which reference to the original text seems to me to render desirable.

"Some men thereupon who belonged to the neighbourhood came to him, and after proffering their submission undertook to guide him to the place most suited for an attack upon the rock, that from which it would not be difficult to capture the place. With these men he sent Ptolemy, the son of Lagos, and a member of the bodyguard, leading the Agrianians and the other light-armed troops and the selected hyspaspists, and directed him, on securing the position, to hold it with a strong guard and signal to him when he had occupied it. Ptolemy, following a route which was trying and difficult, secured the position without being perceived by the barbarians. He fortified this all round with a palisade and a trench, and then raised a beacon on that part of the mountain from which it could be seen by Alexander. The signal fire was seen, and next day Alexander moved forward with his army; but as the barbarians offered valiant opposition, he could do nothing more owing to the difficult nature of the ground. When the barbarians perceived that Alexander had found an attack [on that side] to be impracticable, they turned round and attacked Ptolemy's men. Between these and the Macedonians hard fighting ensued, the Indians making strenuous efforts to destroy the palisade and Ptolemy to hold the position. The barbarians had the worse in the skirmish, and when night fell withdrew.

"From the Indian deserters Alexander selected one who knew the country

* 'Anabasis,' IV. xxix.-xxx.

and could otherwise be trusted, and sent him by night to Ptolemy with a letter importing that when he himself assailed the rock, Ptolemy should not content himself with holding his position but should fall upon the barbarians on the mountain, so that the Indians, being attacked on both sides, might be perplexed how to act. Alexander, starting at daybreak from his camp, led his army to that approach by which Ptolemy had ascended unobserved, being convinced that if he forced a passage that way and affected a junction with Ptolemy's men, the work still before him would not be difficult. And so it turned out; for up to mid-day there continued to be hard fighting between the Indians and Macedonians, the latter forcing their way up while the former plied them with missiles as they ascended. But as the Macedonians did not slacken their efforts, others succeeding to others, while those [before] in advance rested, they gained with trouble the pass in the afternoon and joined Ptolemy's men. The troops being now all united were thence put again in motion towards the rock itself; but an assault upon it was still impracticable. So came this day to its end.

"Next day at dawn he ordered the soldiers to cut a hundred stakes per man. When the stakes had been cut he began from the top of the height on which they were encamped, to pile up towards the rock a great mound, whence he thought it would be possible for arrows and for missiles shot from engines to reach the defenders. Every one took part in the work, helping to pile up the mound. He himself was present to superintend, commending those that with eagerness advanced the work, and chastising any one that at the moment was idling.

"The army on that first day extended the mound the length of a stadion. On the following day the slingers, by slinging stones at the Indians from the mound just constructed, and the bolts shot from the engines drove back the sallies made by the Indians on those engaged upon the mound. The work of piling it up went on for three days, without intermission. On the fourth day a few Macedonians had forced their way to and secured a small hillock level with the rock. Alexander without ever resting drove the mound forward, intending to join the mound to the hillock which the handful of men already held for him.

"But the Indians, terror-struck at the unheard-of audacity of the Macedonians who had forced their way to the hillock, and on seeing the mound already connected with it, abstained from further resistance, and sending their herald to Alexander, professed their willingness to surrender the rock if he would treat for peace with them. But the purpose they had in view was to consume the day in spinning out negotiations, and to disperse by night to their several homes. When Alexander perceived this he gave them time to start off as well as to withdraw the round of sentries everywhere. He himself remained quiet until they began their retreat; and then he took with him seven hundred of the bodyguard and of the hypaspists and was the first to scale the rock where it had been abandoned. The Macedonians climbed up after him, pulling one another up, some at one place, some at another. And then at a preconcerted signal they turned upon the retreating barbarians and slew many of them in the flight; some others retreating in terror flung themselves down the precipices and died. Alexander thus became master of the rock which had baffled Heracles himself."

With this clear, sober, and full record of Arrian the accounts given by Diodorus and Curtius agree in all essential topographical points. That

both these authors used common sources here as elsewhere also, is evident from various indications. But Diodorus contents himself with a much-condensed abstract, and Curtius' narrative owes its greater length mainly to his usual expansion of such minor aspects of the story as specially lend themselves to rhetorical treatment. It will therefore be sufficient, in the case of either account, to note only those points which have a bearing on the location of Aornos.

Diodorus describes the "rock" as a natural stronghold, 100 stadia in circumference, 16 stadia in height, and with a level surface forming a complete circle.* The Indus washed its foot on the south; elsewhere it was surrounded by deep ravines and inaccessible cliffs. An old man familiar with the neighbourhood promised against a reward to take Alexander up the difficult ascent to a position which would command the barbarians in occupation of the rock. Following his guidance, Alexander first seized the pass leading to the rock, and as there was no other exit from it, blocked up the barbarians. He then filled up the ravine which lay at the foot of the rock with a mound and getting thus nearer vigorously pushed the siege by assaults made for seven days and nights without intermission. At first the barbarians had the advantage owing to the greater height of their position. But when the mound was completed and catapults and other engines had been brought into action, the Indians were struck with despair and escaped from the rock at night by the pass from which Alexander had on purpose withdrawn the guard he had left there. Thus Alexander secured the rock without risk.

Curtius in his description of the rock (*petra*), which he calls by the name of *Aornis*, does not give any dimensions but mentions that the Indus, deep and confined between steep banks, washes its foot.† Elsewhere there are ravines and craggy precipices. In rhetorical style, apparently inspired by a reminiscence from Livy, Curtius likens "the rock" to the *meta* of the Roman circus, "which has a wide base, tapers off in ascending, and terminates in a sharp pinnacle."‡ This description, if it is based on some passage of his original source, would suggest that one portion of the "rock" rose into a steep conical point. We are told that under the guidance of an old man from the neighbourhood a light-armed detachment was sent ahead by a detour to occupy the highest summit unobserved by the enemy.§

Curtius next relates that in order to make an assault practicable a ravine was being filled up with a mound. For this the trees of a forest

* Cf. Diodorus, 'Bibliotheca,' XVII. lxxxv.; M'Crindle, 'Invasion of India,' p. 271.

† Cf. 'Historiæ,' VIII. xi.

‡ See M'Crindle, *loc. cit.*, p. 197, referring to Livy, Bk. XXXVII. xxvii.

§ As the leader of the detachment is mentioned Mylleas (or Mullinus), the king's secretary; neither form of the name is otherwise known. The substitution of his name for that of Ptolemy shows that Curtius follows here a source distinct from that of Arrian.

close at hand were cut down and their trunks stripped of branches and leaves thrown in. Within the seventh day the hollows had been filled An assault up the steep slopes by the archers and Agriani was then ordered. Thirty selected youths from among the king's pages under Charus and Alexander formed the forlorn hope. In the highly rhetorical description which follows it is, however, the king himself who is said to have put himself at the head of the assault. Many are said to have perished, falling from the steep crags into the river which flowed below, "since the barbarians rolled down huge stones upon those climbing up, and such as were struck by them fell headlong from their insecure and slippery footing." We are then told in lengthy poetical words of the death of the two leaders, Charus and Alexander, who had got up high enough to engage in a hand-to-hand fight, but were overpowered and fell.

The king, affected by these losses, then ordered the retreat, which was carried out in an orderly fashion. Alexander, though resolved to abandon the enterprise, yet made demonstrations of continuing the siege. Thereupon the Indians, with a show of confidence and even triumph, feasted for two days and two nights, but on the third night abandoned the rock. When their retirement was discovered, the king ordered his troops to raise a general shout. This struck such terror into the fugitives that many "flinging themselves headlong over the slippery rocks and precipices" were killed or were left behind injured.

The three accounts translated or analyzed above are the only ones which have come down to us furnishing any specific data about Aornos. From their comparison we can deduce the following definite indications as regards the locality intended. Aornos was a natural stronghold, situated on a mountain of great height, which precipitous rocky slopes and deep-cut valleys below rendered capable of easy defence against an aggressor. It is important to note that no mention is made anywhere of fortification by the hand of man. There was sufficient level space on the top to permit of considerable numbers finding there a safe refuge. The site was near to the Indus, which flowed at its foot.* Its relative height must have been very striking to account for the definite measurements of 11 and 16 stadia respectively, which Arrian and Diodorus record, approximately corresponding to 6600 or 9600 feet. In the same way the circuits of 200 and 100 stadia respectively which these two authors mention, approximately corresponding to 22 or 11 miles, can obviously apply only to a mountain massif or range and not to a single hill or peak.

That Aornos was situated on such a massif or range is in fact made

* Both Diodorus and Curtius definitely mention this point, and Arrian's silence does in no way contradict it. On the other hand, no weight can attach to the statement in Curtius' highly coloured description of the siege which makes those who lost their foothold in scaling the "rock" from the ravine fall into the river; for the possibility of this is manifestly excluded by his comparison of the rock with a meta "which has a wide base, tapers off in ascending," etc.

perfectly clear by what all three authors relate of the commanding height attacked by the Macedonians before the start of the siege and reached after an arduous ascent. Both Arrian and Curtius state that the march by which the light-armed detachment sent ahead by Alexander secured this position under local guidance remained unobserved by the enemy. This distinctly suggests that the route followed to that commanding height led up a valley which was hidden from the view of the defenders of Aornos. This assumption finds strong support in Arrian's reference to the pass (πάροδος) to which Alexander, when subsequently following the same difficult route, had to ascend amidst severe fighting, before he could join Ptolemy's detachment holding the position above Aornos. Incidentally the opposition here encountered by Alexander indicates that this route leading to the height of the range, though not visible from Aornos and hence not obstructed on the first occasion, was yet accessible to its defenders without their having first to dislodge the detachment on the height. We see from Arrian that an attempt to dislodge it had in fact been made on the preceding day but had failed.

We come now to the most significant among the topographical features recorded in connection with Alexander's siege of Aornos: I mean the deep ravine separating the heights on which the Macedonian camp stood from the nearest part of the "rock." Here, too, Arrian's account is the fullest and clearest. It shows us that the primary object for which Alexander had to resort to the expedient of constructing a great mound across this ravine was to bring the opposite slope held by the enemy within effective range of what by an anachronism might be called his troops' small arms and field artillery. The precipitous nature of that slope would lend itself to easy and most effective defence, in particular by means of large stones rolled down, a formidable method of defence the actual use of which Curtius here specially mentions.* No assault could succeed here until "it would be possible for arrows and for missiles shot from engines to reach the defenders."

We obtain some indication of the great width of the ravine, and indirectly also of its depth, from Arrian's statements concerning the construction of this mound. By the united efforts of the troops it was extended on the first day the length of a stadion, *i.e. circ.* 600 feet. After this it became possible for slingers posted on the mound and for shots from the engines to drive back sallies made against those engaged upon the mound. But "the work of piling it up went on for three days without intermission," before an assault made on the fourth enabled a handful of Macedonians to establish themselves on "a small hill which was on a level with the rock." Yet even after this, we are told by Arrian, the construction of the mound was continued until it was joined up with the

* Very striking illustrations in modern times of the results which may be obtained by this means of defence on alpine ground, were supplied by its use on the part of the valiant bands of Tyrolese peasants who successfully defended their country in 1809 against invasion by Napoleon's French and Bavarian troops.

position thus gained.* This position must have lain still considerably below the crest of the height which faced the ravine from the side of the "rock." Thus only is it possible to account for the stiff climb which it cost Alexander and his selected 700 men to reach the top and fall upon the retreating barbarians during the night following their offer of surrender.

I may now proceed to show how easy it is to recognize all the topographical details elucidated above as regards Aornos and Alexander's siege of it in the local features of Pīr-sar and its environs as illustrated by the map and my preceding description. Taking the general features first, we see from the map that the Indus flows in a wide bend round that eastern extremity of the range of which the Pīr-sar spur is the largest and most conspicuous offshoot. Diodorus' more specific statement that the Indus washed the rock on its southern side is borne out by the map. This shows that the portion of this bend nearest for those coming up the Indus valley lies due south of Pīr-sar. The relative elevation of Bar-sar at the northern end of the spur (7914 feet by clinometer), if measured from the bank of the Indus (*circ.* 1700 feet at Thākōt) agrees remarkably well with the height of Aornos, 11 stadia or about 6600 feet, as recorded by Arrian.† If the relative height of the Ūṇa peak (8720 feet above sea-level by triangulation) rising immediately to the west of Bar-sar is taken, the agreement becomes, if anything, still closer. Obviously no such test can be applied to the measurement of the circuit; for we do not know on what lines or on which level it was taken. It is curious to note that if a map measurer is passed round the foot of the eastern extremity of the range from near Sarkul on the Indus past the Takhta pass to Shang and thence back again behind the Ūṇa peak we get a total direct length of some 22 miles. But of course other measurements, greater or lesser, would also be possible.

Coming next to the commanding height near Aornos which a light-armed force was sent ahead under Ptolemy to occupy, it is clear that the small plateaus on either flank of Mount Ūna would exactly answer the purpose in view. This was to secure a position on that side from which the "rock" was most assailable. Taking into account all the tactical advantages which the possession of higher ground must have implied for the assailant, in times before the invention of long-range firearms even more than since, there can be no doubt that the side whence an

* This notice of Arrian about the continued extension of the mound disposes of the apparent discrepancy which certain commentators have found between his account and that of Diodorus and Curtius, who mention seven days as the time taken over the construction of the mound.

† Bar-ṣar as well as the rest of Pīr-sar is visible from more than one point of the right bank of the Indus between Sarkul and Gunahghar. It is obvious that the height measurement recorded by Arrian must be a relative one, and that the river-bank can reasonably be supposed to have been the place from which it was taken. A height measurement of this kind from a convenient base is a simple geometrical task, and Greek surveying knowledge at the time of Alexander was fully equal to it.

attack upon the rock-girt plateau of Pīr-sar would offer most chances of success would be where the spur joined on, and was overlooked by, the main range. This is the Būrimār plateau on the eastern shoulder of the culminating peak of Ūṇa (Fig. 6). But there are considerations which make me inclined to favour the gently sloping alp of "Little Ūṇa" immediately below the western flank of Ūṇa-sar as the most likely site of Ptolemy's fortified encampment. From here it was easier to guard the route leading up from the river, and thus to give that assistance for the subsequent ascent of the main force which Arrian's account shows to have become indispensable once the defenders had discovered the Macedonian move. "Little Ūṇa" offers also the advantage, anyhow nowadays, of easier access to water, and by its situation it was less exposed to attack from the enemy's main position on Pīr-sar.

The route by which the crest of the range where it overlooks Pīr-sar could best be gained from the river certainly led up the valley to the west of the Danda-Nūrdai spur, and thence from its head to "Little Ūṇa." The information collected by me showed that this route is considered the easiest from that side for reaching the grazing-grounds on the top of the main range. It is regularly used by the local Gujars when moving there from their hamlets above the Indus. The ascent in the valley is undoubtedly steep, but its bottom is less confined than that of the valley on the other side of the Danda-Nūrdai spur towards Pīr-sar. Near the head of the valley the pass shown in the map with a clinometrical height of 6471 feet gives access to the lower slopes of Little Ūṇa, and from these the alps occupied by the Gujar huts of Achar and Little Ūṇa can be gained without difficulty.

It is the route just described which for the reasons indicated I believe to have been followed first by Ptolemy and then also by Alexander's main column. Arrian tells us that after Alexander had seen the beacon lit by Ptolemy on the mountain he had occupied, he next day moved forward with his troops, but as his progress was obstructed by the barbarians, "he could do nothing more on account of the difficult nature of the ground." A look at the map explains how easy it was for the enemy collected on Pīr-sar to obstruct Alexander's march in that valley once Ptolemy's preceding move had been discovered and had indicated the direction which Alexander's attack was likely to take. The valley west of the Danda-Nūrdai spur is within easy reach from the south-western outlier of Pīr-sar across the heights above the pass known as Pēzal-kandau, 4620 feet above sea-level. By crowning these heights the enemy could seriously interfere with the Macedonians' move up the valley without risking a battle in the open. It was equally easy for them, when Alexander's advance up the valley had been brought to a standstill, to turn round and moving higher up to attack Ptolemy's detachment holding the fortified camp which, we have seen, may be placed at or near Little Ūṇa.

This attack was beaten off, and when Alexander on the next day resumed his advance up the valley, the Indians who contested it were attacked in the rear by Ptolemy, to whom Alexander during the night had managed to send orders to this effect, as recorded by Arrian. The importance of this help, as well as the difficulties encountered by Alexander, can be well understood by looking at the map. Not until the pass marked there with the height of 6471 feet had been taken could the junction with Ptolemy's force be effected, and considering its elevation and the steepness of the Danda-Nūrdai spur, Arrian's description of the severe struggle it cost to gain this pass (πάροδος) cannot have been exaggerated. Once the Macedonian forces were united in the course of the afternoon the further advance towards the "rock," which Arrian mentions as having been made during the remainder of the day, could present no difficulty. This advance would necessarily lie along the crest of the range as far as the Būrimār plateau. That it came to a standstill, as Arrian records, without any attack on the rock being possible at the time is fully explained by the great natural obstacle met beyond, the fosse of the Būrimār ravine.

I have already described above the general character of this ravine, its considerable depth and the precipitous nature of its slopes. But in order to realise better how fully its features explain Alexander's resort to having a mound constructed to cross it, attention must be called to some details. I have referred above to the protection afforded to Pīr-sar by the extremely steep rocky slopes with which the Bar-sar hill forming its northern bastion falls off towards the ravine some 800 feet lower separating it from Būrimār. These slopes, so easily defended from above, could not be attacked with any chance of success unless they could be brought within the range of missiles. Now the direct distance separating the top of Bar-sar from ground of approximately equal level on the Būrimār plateau is some 1300 yards, and that between the Māshlun shoulder of Bar-sar and a corresponding elevation on the slope below Būrimār certainly not less than 500 yards. It hence follows that since the *ballistai* and *katapeltai* forming the Greek artillery of that period could throw stones and darts only to a distance of some 300 yards,* and slingers and bowmen their missiles not much farther, it was necessary to advance the position from which their "fire" was to be used. This could be done here with effect only in a horizontal direction, for a descent into the ravine would not have increased the chance of commanding the higher slopes.

The ingenious expedient of constructing a mound to secure this object is thus fully accounted for by the configuration of the ground observed at the Būrimār ravine. In the same way the use made of timber for its construction, whether in the form of stakes or tree-trunks, fully agrees with the abundance of tree growth still observed on the slopes both above and below the Būrimār plateau. Undoubtedly this plentiful timber

* Cf. M'Crindle, 'Invasion of India,' p. 21.

available on the spot would supply the handiest material for the purpose. That the mound is said to have been advanced a stadion or about 200 yards on the first day is easily understood in view of the slope near the eastern edge of the Būrimār plateau being comparatively easy. But it becomes steadily steeper and steeper as the bottom of the ravine is approached, and in consequence the rate in the daily advance of the mound was bound to decrease in proportion to the greater depth to be filled up. Thus it is explained why, even when on the fourth day a few Macedonians had forced their way to a small hillock on the opposite slope, it was necessary to continue work on the mound in order to join the two, as Arrian tells us.

I believe we can safely recognize this "small hillock" (ὀλίγον γήλοφον) in the shoulder of Māshlun, described above. Its level as measured by aneroid is about 450 feet above that of the bottom of the Būrimār-kandao, and about the same above the flat portion of Pīr-sar. It is true that Arrian calls this small hill ἰσόπεδον τῇ πέτρᾳ, "level with the rock." But this is easily understood, considering that a continuous slope passing Pīr-sar connects Māsh-lun with the plateau portion of Pīr-sar. That there still rose a steep height above the "small hillock" is made perfectly clear by Arrian's own narrative, where he describes the stiff climb which brought Alexander and his 700 to the top of the "rock," after the mound had been joined to the hillock and while the defenders were abandoning Aornos. I myself retain a very vivid recollection of the trying scramble over steep crags by which the summit of Bar-sar was gained after my visit to Māshlun. I can hence realize what this ascent of about 350 feet may have meant for men encumbered by armour. That the height of Bar-sar was a very convenient place for the Macedonians to assemble and then at a preconcerted signal to turn upon the retreating barbarians, as related by Arrian, is obvious. In the same way it is easy to understand that some of the latter in their terrified flight during the night lost their lives by falling down precipices below Pīr-sar.

The above observations will show how closely all topographical details about Pīr-sar agree with what our extant records tell us of Aornos and Alexander's operations against it. But this identification may be supported also by antiquarian and philological evidence. There is no mention whatsoever in our texts of the natural defences of Aornos having been strengthened by the hand of man, and we may attach all the more significance to this negative fact in view of the obvious desire of our authors to emphasize the greatness of the difficulties overcome at the capture of the stronghold. That Aornos was recognized by them to have been solely a natural stronghold is clearly shown by the fact that they ordinarily designate it simply by the term *petra*, "the rock." *

* The same notion seems to be conveyed also by Curtius, where, in recording Alexander's triumph, he speaks of him as "rex locorum magis quam hostium victor"; cf. 'Historiæ,' VIII. xi., *fin*.

But we are told by Arrian that Alexander after the capture built there a fortified post and entrusted its guard to Sisikottos, an Indian deserter who had joined him in Baktra and proved trustworthy. Curtius, too, mentions Sisicostus as having been charged with the guarding of the rock and the adjoining territory. Curtius further mentions that Alexander erected altars on the "rock" to Minerva and Victory, while Arrian refers merely to sacrifices performed there by him.

In view of Arrian's statement it is of distinct interest that I found the badly decayed remains of what undoubtedly was a small fort on the summit of Bar-sar. The walls occupy whatever level space there is on the top, and to the north, towards Lānde-sar, descend also on the slope. They form an irregular quadrilateral, of which the longest side eastwards measures 136 feet and the shortest to the north 60 feet. The walls, 5 feet thick throughout, are deeply buried in debris and earth, largely humus deposited by decay of the luxuriant forest vegetation which has grown up and flourished evidently for centuries between and over the ruins. It was only by a careful search that the lines of the enclosing walls and some small rooms in the southern part of the area enclosed could be traced. What little excavation was possible within the limits of time and labour showed masonry of a type not unlike that found at Bīr-kōṭ and at ancient dwellings of early Buddhist times in Swāt, stone slabs, unhewn but fairly uniform in thickness, being set in mud plaster. Among the potsherds brought to light from the floor of one of the rooms there were some showing ornamentation similar to that found at Buddhist sites of Swāt but less finished.

What pointed to considerable antiquity was the far-advanced decay of the whole structure as compared with the fair condition in which most of the ruined dwellings and fortified mansions dating from Buddhist times are found at Swāt sites. Yet these by their position are far more exposed to erosion and other destructive factors than the very top of Bar-sar could be. The position is such as could not have been chosen for any other purpose than defence. Whether the remains indicated can go back as far as the Macedonian invasion, and whether they mark the spot where the fort erected under Alexander's orders might have stood, it is impossible to assert without thorough investigation, such as was not possible at the time of my visit. But it is certainly noteworthy that the ruined fort crowns just that height which protects the Pīr-sar plateau on the side where, as we have seen, it was most exposed to attack.

The old Gujars who had been summoned from the hamlets below as depositories of local lore (Fig. 10), knew of no special tradition attaching to those ruined walls.* Nor had they ever heard of Alexander having visited these parts. But they had been told by their elders that Pīr-sar had

* Among them was Ibrāhīm Bāba, a venerable old man, who was brought up with much trouble in a litter and declared to be a fountain-head of local information. He remembered having fought as a man between twenty and thirty against the British at the Ambēla Pass in 1862.

served as the summer abode of a Rāja called Sirkap, who otherwise lived below at the village of Sarkul on the Indus opposite Thākōt. This name of "Rāja Sirkap" is widely attached to ancient sites in these parts on either side of the Indus, *e.g.* to the ruins of the earliest as yet explored city at Taxila. But it gives no clue beyond indicating a traditional belief that the Pīr-sar plateau was occupied in early times long before the advent of Islām. The same Gujar informants derived the name Pīr-sar from a Saiyid Pīr Bēghan, who is said to have lived on the plateau before the Pathāns took the land, and to have been buried as a saint at the previously mentioned Ziārat, near the centre of Pīr-sar.

Whether the ground now under cultivation or occupied by Gujar huts and graveyards on Pīr-sar hides any datable remains it is impossible to say. But in the mosque which lies some 300 yards south of the Ziārat there are two large carved slabs of white calcareous stone, now used to support the roof but undoubtedly ancient. Their exposed portions measure 6 feet in height, with a width of 16–17 inches and a thickness of 4 inches. They were said to have been dug up somewhere near the centre of the area some time ago. But nobody could or would indicate the exact spot; my inquiry here, as elsewhere, suggested, no doubt, an intention to hunt for buried "treasure."

There still remains the philological evidence to be set forth. It is furnished by the name *Ūṇa*, in Pashtu also spent *Ūṇra*, applied to the peak rising immediately above Būrimār and overlooking Pīr-sar. We do not know the exact indigenous form of the local name which the Greek Ἄορνος was intended to reproduce. But if we assume it to have sounded **Avarna*, it is as easy to account for its phonetic transition into modern *Ūṇa* (*Ūṇra*) as it is to prove that Ἄορνος was the most likely Greek rendering of it. As regards the latter, it will suffice to point to the Greek Ἴμαος as the well-known rendering of the Sanskrit *Himava(n)t*, applied like its doublet Ἠμωδός, *Haimavata*, to the Himālaya range, or what was believed by the Greeks to be a portion of it.* That the name rendered by Ἄορνος appealed to Greek ears also by its apparent Greek meaning "[the mountain] where there are no birds," is likely enough. We know from the reproductions of other Indian local names how ready Alexander and those with him were to seek an echo of Greek words in the Indian appellations they heard.† But there is not the least reason to doubt that Ἄορνος was meant to render a genuine local name and was not a freely invented Greek designation.‡

* Cf. Arrian, 'Indikē,' ii. 3. In Ptolemy's Geography Imaos undoubtedly represents the great meridional range which joins the T'ien-shan to the Hindukush.

† See Weber, "On the Greek pronunciation of Indian words," *Indian Antiquary*, ii. pp. 147 *sqq*. For well-known instances of this kind of "popular etymology," cf. *e.g.* Ἀκεσίνης, "the healer," as Alexander's rendering of the old Sanskrit name *Asiknī* of the river Chenāb in the Panjāb, and the inauspicious interpretation of its other name *Chandrabhāga* as Σανδαρόφαγος as "eater of Alexander."

‡ It deserves to be noted that the fanciful interpretation of the name as meaning "inaccessible even to the birds" is only to be found in such very late authors as

There is definite philological evidence to show that in the modern name *Ūṇa* (*Ūṇra*), pronounced with that peculiar cerebral *ṇ* sound which in Pashtu spelling also figures as *ṇr*, we may safely recognize a direct phonetic derivative of an earlier form **Avarṇa*, the assumed original of Aornos. The contraction of an earlier *ava*, both initial and medial, into *ū* is well known to the phonology of the Dardic as well as of the Indo-Aryan language branches.* Similarly the regular assimilation of the cerebral consonant *r* to a following *n* and the subsequent simplification of the resulting double consonant *ṇṇ* into *ṇ*, with eventual complementary lengthening of the preceding vowel, is fully attested in the phonetic development of both Indo-Aryan and Dardic languages.†

I have left it to the last to consider a classical notice which, if it is taken to refer to Aornos, as I believe it must, is of quasi-chronological interest and indirectly helps to support the proposed location of that stronghold. Chares of Mytilene, one of Alexander's chief officials, is quoted by Athenæus as having in his history of Alexander recorded a method of conserving snow used at the siege of the Indian town of Petra. According to Chares, we are told, "Alexander ordered thirty trenches to be dug close to each other and to be filled with snow, branches of trees being also thrown in, in order that the snow in this way may be preserved longer." ‡ I believe that in this stray notice we have a useful indication both of the elevation of the "rock" and of the season when Alexander besieged it.

We know from a record of Aristobulos, who shared Alexander's campaign and is quoted by Strabo, that the army, having set out for India from the Paropamisadai, *i.e.* the valleys between the Hindukush and Kābul, after the fall of the Pleiades spent the winter in the hill territories of the Aspasioi and Assakēnoi, but in the early spring descended to the plains and moved to Taxila, thence to the Hydaspes and the country of Poros.§ That the siege of Aornos was the last of the major operations carried out before the crossing of the Indus and the advance to Taxila is quite certain from the concordant records of Arrian and the other

Dionysios Periegetes and Pseudo-Callisthenes (see C. Müller's edition, III. iv. note). It could scarcely have appealed very seriously to the Macedonians, who on their passage from Baktra across the Hindukush had seen mountains so much higher than any to be met in this portion of the Indus valley.

* See Grierson, 'Piśāca Languages,' pp. 88, 126; "Phonology," *Z.D.M.G.*, 1895, p. 409.

† Cf. Grierson, *loc. cit.*, pp. 21, 123; *Z.D.M.G.*, 1896, pp. 21, 28.

It deserves to be noticed that the strongly cerebral sound *ṇ* (*ṇr*) of Pashtu occurs not only in words borrowed from Indian dialects, but also represents the Old Iranian combination, *r* + *n*; cf. Darmesteter, 'Chants Populaires Afghans,' pp. xlvii. *sq.*

‡ See Athenæus, III. p. 124, C, as quoted by C. Müller in his edition of Arrian, 'Fragmenta,' p. 117. Anspach, 'De Alexandri Magni expeditione Indica' (Leipzig, 1903), p. 32, note 90, rightly observes that the erroneous designation of Petra as a "town" must be attributed to Athenæus, not to Chares.

§ Strabo, 'Geographia,' XV. p. 691.

historians. And also that this operation was undertaken after Alexander had descended to the plain of the Peshawar valley. We can therefore place that siege neither much before nor much after the month of April 326 B.C.

Now from my personal experience on my recent explorations in the Swāt region during March, April, and May, and from the climatic conditions previously observed on similar ground of the North-West Frontier, I may safely assert that in April snow could not be found there much below an elevation of 6000 feet. On the other hand, should water be needed for large numbers, the need of preserving snow for drinking purposes on heights situated between 6000 and 9000 feet might well arise at a season when slopes are exposed to the powerful sun of an Indian spring. From what I saw on my way past the Ūṇa peak and the adjacent heights I believe that the expedient recorded by Aristobulos would probably nowadays also recommend itself if troops were obliged for a time to occupy that high ground and its southern slopes. The spring of the present year had been quite exceptionally belated. Yet at the time of my visit at the very end of April we found snow only in small sheltered hollows on the northern slopes of Mount Ūṇa and none at all on the south. The fine spring above "Little Ūṇa" and another at Adramār, about the same distance on the opposite side of the peak, would scarcely suffice for a large force encamped on this part of the range. Hence a thoughtful commander, faced by uncertainty as to the length of his stay on those heights, would only act wisely if he took steps to conserve whatever remained of the winter's snowfall. We thus see that this fragmentary reference also perfectly accords with that combined evidence of texts, topography, and name which has led us to locate Aornos on that rock-girt site by Mount Ūṇa.

The notices left to us of Alexander's movements after the capture of Aornos are too brief and too divergent in their details to permit us to trace his route with certainty on the map. Arrian tells us that Alexander moved from the rock into the territory of the Assakēnoi, having been informed that the brother of Assakēnos, with elephants and a host of neighbouring barbarians, had taken refuge in the mountains of that region.* When he reached there the town of Dyrta he found it, together with the surrounding district, abandoned by its inhabitants. Thereupon he detached certain commanders to examine the localities and to secure information from any barbarians captured, particularly about the elephants. We have seen above that Assakēnos was the ruler whose capital Massaga was taken on the Macedonians' first entry into Lower Swāt. Hence the mountain region in which his brother had taken refuge, and which was reckoned as part of the territory of the Assakēnoi, might well have been Bunēr; for this, as the records of the Chinese pilgrims clearly show, was in ancient times included in Swāt territory, just

* See 'Anabasis,' IV. xxx. 5.

as it is now again.* But as the position of Dyrta has not been identified and no other indications are furnished, the above remains uncertain.

Bunēr can be reached from the side of Pīr-sar and Chakēsar by several routes leading through Pūran and the Mukhozai and Chagharzai country. And to Bunēr seems to point what we are next told about Alexander having marched on the Indus: "and the army going on before made a road for him, as those parts would otherwise have been impassable." This description would well apply, as first suggested by General Abbott, to the most direct route leading from the central parts of Bunēr to the Indus along the Barandu river; for the lower valley of the latter, as yet unsurveyed and in part inaccessible owing to the colony of "Hindustānī fanatics" at present settled there, is reported to be a narrow gorge in places impracticable for traffic.

From captives Alexander learned that the Indians of that territory had fled to Abisares, *i.e.* to the ruler of Hazāra, having left the elephants behind by the river.‡ Alexander's successful capture of these elephants is then related. Finally we are told that, serviceable timber having been found by the river, this was cut by the troops and the ships built with it taken down the Indus to where a bridge had long before been constructed by the other portion of the army. At the present time the lowest point on the right bank of the Indus where something like forest can be found is a few miles above Amb, where the half-inch map sheet No. $43\frac{B}{S.E.}$ marks the "Palāli Rakh." But conditions may have been different in ancient times.†

Diodorus' account of what followed the capture of Aornos is very brief.‡ We are told by him that Aphrikes, an Indian chief, was hovering in that neighbourhood with 20,000 soldiers and 15 elephants. The chief was killed by his own men, who brought his head to Alexander and thereby purchased their own safety. The elephants wandering about the country were secured by the king, who then arrived at the Indus, and finding it bridged gave his army a rest of thirty days before crossing to the left bank. Curtius' account, evidently taken from the same source, supplements the above by some details, which however do not furnish any clear topographical guidance.§ Alexander is said to have marched from the "rock" to Ecbolima. Having learned that a defile on the route was occupied by 20,000 armed men under Erix, he hurried forward, dislodged the enemy with his archers and slingers, and

* Cf. 'Serindia,' I, p. 9.

† There is also a possibility, first indicated by General Abbott, to be taken into account, viz. that the original record referred to logs of timber such as are nowadays cut in high side valleys up the Indus, particularly in Tangīr and Kandia, and allowed to drift down the river for sale in the Yusufzai plain. At Darband, on the left bank some miles above Amb, an eddy helps to arrest such drift timber, which then is dealt with by traders.

‡ 'Bibliotheca,' XVII. lxxxvi. 2–3.

§ 'Historiæ,' VIII. xii.

thus cleared a passage for his heavy-armed troops behind. Erix was killed in flight by his own men and his head brought to Alexander. Thence he arrived after the sixteenth encampment at the Indus, where he found everything prepared by Hephaistion for the crossing.

That by Ecbolima the same place is meant as Arrian's and Ptolemy's Embolima is scarcely subject to doubt; also that the chief Erix is the same whom Diodorus calls Aphrikes. But both authors fail to give any clear indication as to where the defile held by this chief lay. If the sixteen marches to the Indus crossing have to be reckoned, as Curtius' wording implies, from that defile, this certainly could not be looked for on the Barandu river; for thence the march to Ūnd (Uhand), the ancient Udabhāṇḍa, where the passage of the Indus in all probability took place,* could not have taken more than four or five marches. The defile held by Erix may have lain far away from the Indus, and hence been distinct from the difficult route by which Arrian makes Alexander reach the Indus. In this case Curtius has erred in indicating Ecbolima as the immediate goal of Alexander's move after Aornos was taken. However this may be, Curtius' reference to those sixteen marches, if considered together with Arrian's account, shows that Alexander's operations after the taking of Aornos must have been fairly extensive. In this we may well recognize a fresh proof of the importance which was attached by him to the complete subjugation of the Assakēnoi.† The reason obviously was the need to secure the flank of the main line of communication towards India against interference from the hills northward.

We have now accompanied the great conqueror right up to the starting point for his invasion of India proper, and here we must leave him. Alexander's triumphal progress through the wide plains of the Panjāb has, owing to the fascination exercised at all times by strange distant India, attracted most interest on the part of his historians, ancient as well as modern. But only those who are familiar with the natural difficulties of the territories beyond the present North-West Frontier and with their military history in recent times can fully appreciate the greatness of the obstacles which Alexander's genius as a leader and the extraordinary pluck and toughness of his hardy Macedonians faced and victoriously overcame during their preceding long campaign in those mountains.

* Cf. Vincent Smith, 'Early History of India, 2, p. 55.

† Arrian, V. xx. 7, mentions a report which Alexander, while on his way to the Akesines or Chenāb, received from Sisikottos, the Satrap of the Assakēnoi, about their subsequent revolt, and records the measures taken by Alexander to quell this.

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Map to illustrate the paper on

ALEXANDER'S CAMPAIGN
on the
INDIAN NORTH-WEST FRONTIER
by
SIR AUREL STEIN, K.C.I.E.

Scale: 1/500,000.

Miles.

Heights in Feet

This map is based on the survey of Torabaz Khan of the Survey of India, under the direction of Sir Aurel Stein, 1926, combined with earlier surveys.

Scale 1/5,000,000.

HINDUKUSH
KAFIRISTAN
AFGHANISTAN
Chitral
Gilgit
Indus
Indus Kohistan
Area of Map
Torwal
Upper Swat
DIR
Hinduraj Range
Bajaur
Chakdara
Malakand
MOHMAND
BUNER
Jalalabad
Charsadda
Peshawar
Attock
Rawalpindi
ATTOCK
JHELUM
Jhelum
PUNJAB
N. W. FRONTIER PROV.
HAZARA
KASHMIR
Wular Lake

UPPER SWAT
Ghorband
Kana
Chakesar
BUNER
Puran
LOWER SWAT
Chagarzai
Kalam
Koshujan
Chodgram
Torwal
Barikot
Charbagh
Udegram
Thana
Allahdand
Chakdara

ALEXANDER'S CAMPAIGN
INDIAN NORTH-WEST FRONTIER
Stein

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